ENGINEERING NEWS-RECORD

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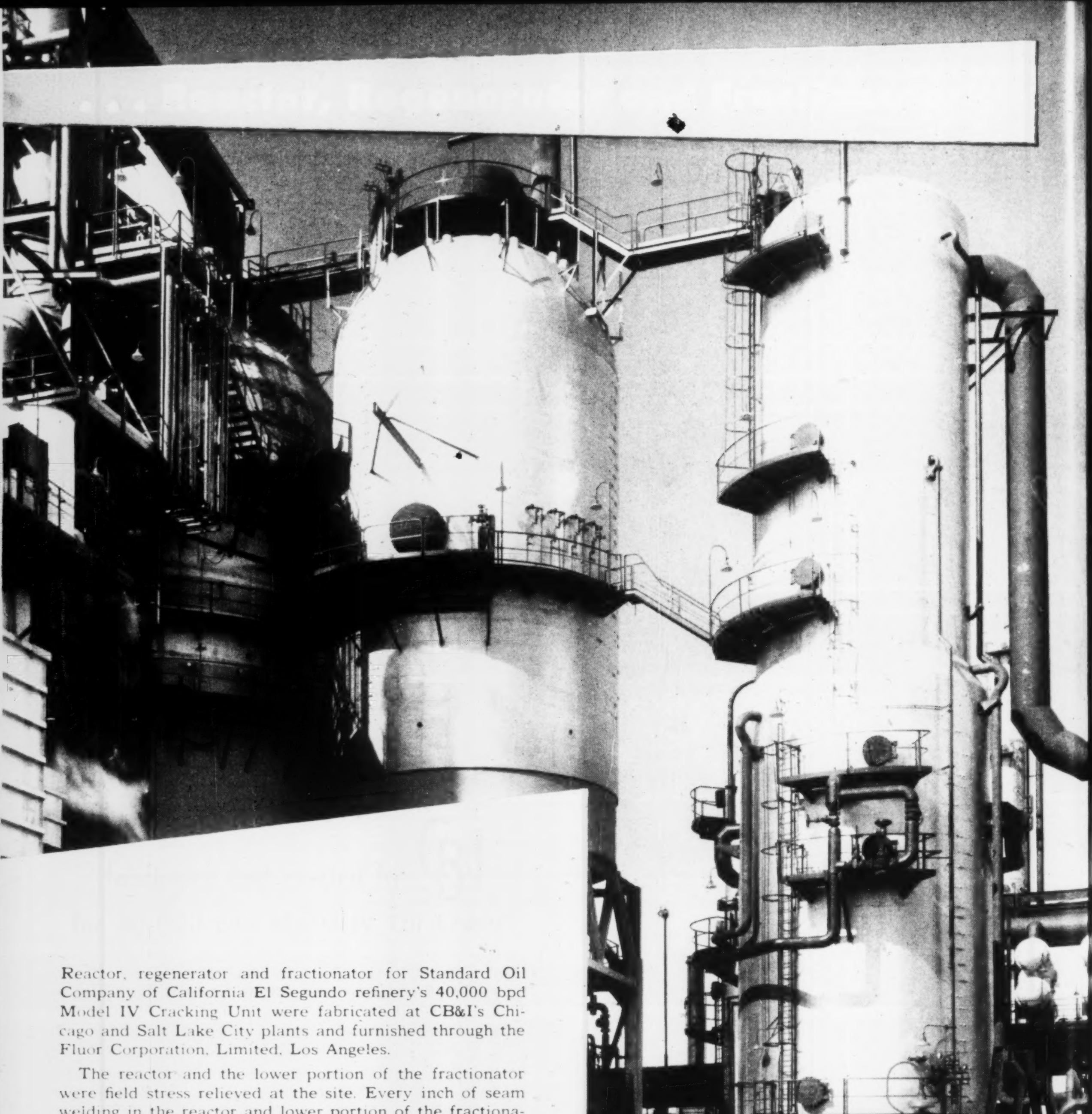
20-ton precast shells roof a gym *p. 45*

A McGRAW-HILL PUBLICATION



. . . Reactor, Regenerator [illegible]

Reactor, regenerator and fractionator for Standard Oil Company of California El Segundo refinery's 40,000 bpd Model IV Cracking Unit were fabricated at CB&I's Chicago and Salt Lake City plants and furnished through the Fluor Corporation, Limited, Los Angeles.

The reactor and the lower portion of the fractionator were field stress relieved at the site. Every inch of seam welding in the reactor and lower portion of the fractionator was X-rayed to assure compliance with ASME code.

CB&I's experience and facilities assure proven ability to create steel plate structures of standard or unique design. When planning, plan with CB&I. Further information may be obtained from our nearest office.

40,000 bpd Model IV Catalytic Cracking Unit at Standard Oil Company of California's El Segundo refinery. The reactor, regenerator and fractionator were fabricated and erected by CB&I.

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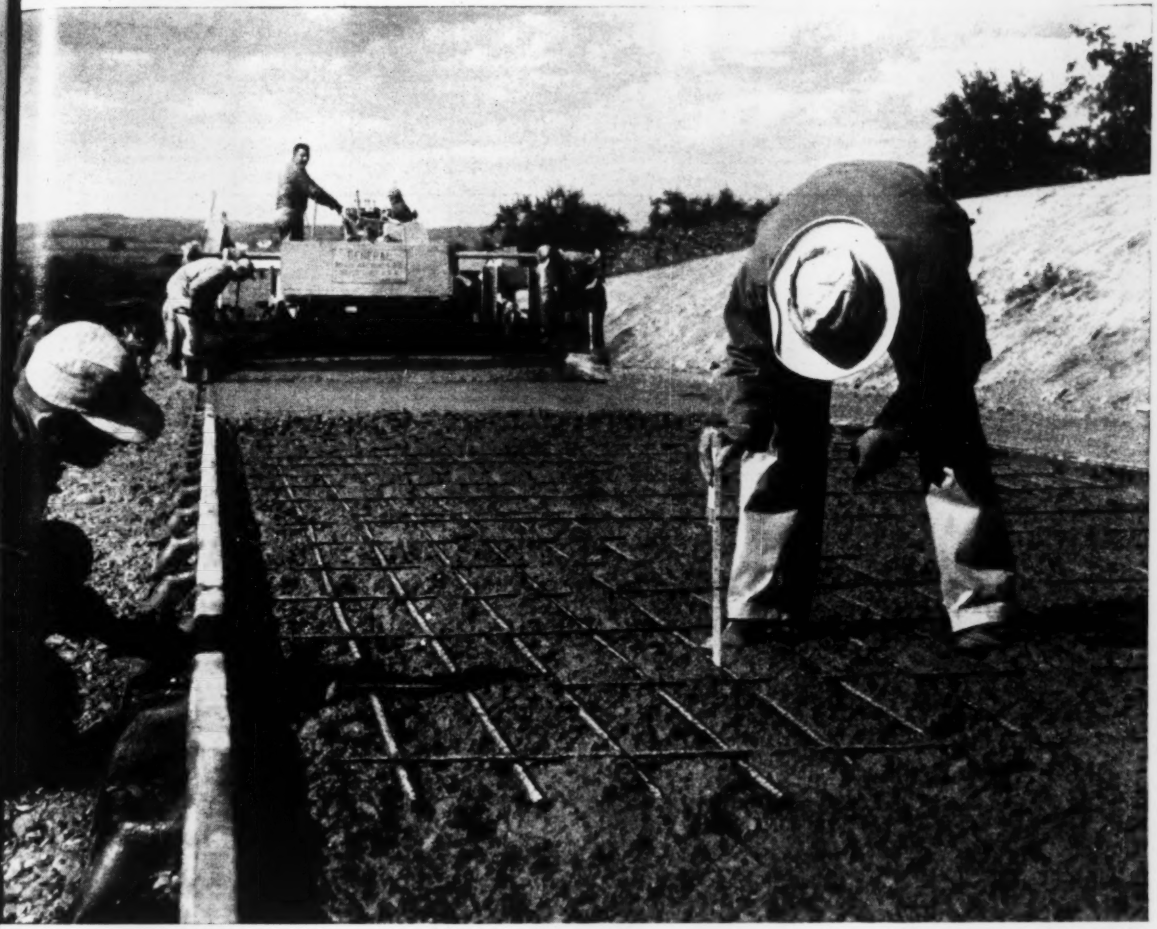


The Bethlehem shop-fabricated bar mats are made up of nine No. 5 bars and seven No. 3 bars.

Continuous Reinforcement

IN 2-MILE STRETCH OF HIGHWAY NEAR YORK, PA.

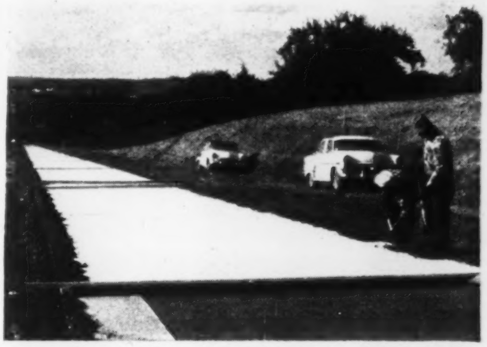
During the relocating of sections of U. S. Route 111, between Harrisburg and York, Pa., it was decided to pave a two-mile stretch using continuous reinforcement instead of transverse contraction and expansion joints and standard reinforcement.

This longest stretch of continuously reinforced highway in Pennsylvania is four lanes wide, with a 20-ft medial strip. Each lane is 12 ft wide. A 9-in. slab was laid.

No transverse joints were used. Instead, special mats of deformed bars were laid to form the continuous steel reinforcement. The mats, which were furnished by Bethlehem, had a weight of approximately 181 lb per 100 sq ft and were placed at the midpoint after the first course of concrete had been struck off, just as ordinary mats are placed in reinforced-concrete paving, without any necessity for accessories.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

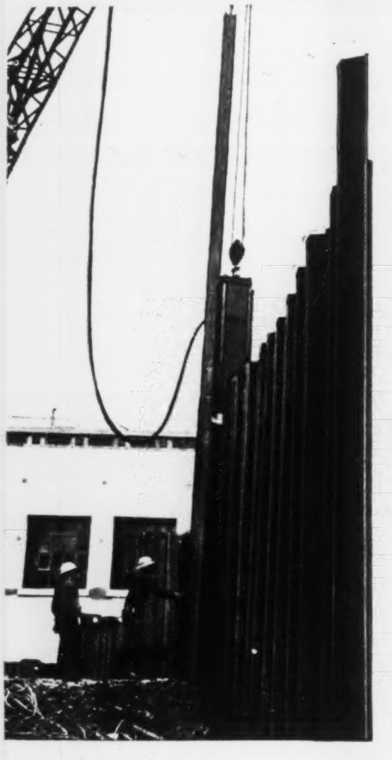
On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. Export Distributor: Bethlehem Steel Export Corporation



H. J. Williams Company, of York, Pa., laid the continuous steel reinforcement and paved this two-mile stretch of Route 111.

BETHLEHEM STEEL

At 3 P.M.... CAVE-IN!



Cave-ins will happen, through no fault of the contractor. On this excavation job, there was erratic soil behavior, shifting loads, saturating rain . . . everything unpredictable.

When it happened, L. B. Foster Co. was called at 3 P.M. for rental steel-sheet piling *in a rush.* We cut MP-116 piling in our yard, and delivered it in Foster trucks to the job site 400 miles away before the crews started work next morning.

This is typical of the dependable help contractors can expect . . . and get . . . with Foster's Piling Rental Plan. Always the exact length and exact section . . . when you need it . . . on low fixed cost. Call your nearest Foster office for quotations—find out for yourself the real savings in Renting Piling from Foster.

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ENGINEERING NEWS-RECORD, Vol. 158, No. 5, January 31, 1957

Published weekly by McGraw-Hill Publishing Company, James H. McGraw (1860-1948), Founder. **Executive, Editorial Advertising and Subscription Offices, McGraw-Hill Building, 330 W. 42nd St., New York 36, N. Y.** Publication Office, 99-129 North Broadway, Albany 1, N. Y. Donald C. McGraw, President; Joseph A. Gerardi, Executive Vice President and Treasurer; John J. Cooke, Secretary; Nelson Bond, Executive Vice President, Publications Division; Ralph B. Smith, Vice President and Editorial Director; Joseph H. Allen, Vice President and Director of Advertising Sales; A. R. Venezian, Vice President and Circulation Coordinator. **SUBSCRIPTIONS:** Address correspondence to Engineering News-Record—Subscription Service, 99-129 North Broadway, Albany 1, N. Y., or 330 W. 42nd St., New York 36, N. Y. Allow one month for change of address. Subscriptions are solicited only from persons with an identifiable commercial or professional interest in construction and building. **Position and company connection must be indicated on subscription orders.** Single copies 35¢. Subscription rates—United States and possessions, $6.00 a year; $9.00 for two years; $12.00 for three years. Canada $8.00 a year; $12.00 for two years; $16.00 for three years. All other countries $20.00 a year; $30.00 for two years; $40.00 for three years. Second class mail privileges authorized at Albany, New York. Printed in U. S. A.

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For more reasons why "they all like Allis-Chalmers engines," see your Allis-Chalmers engine dealer, or write for detailed information.

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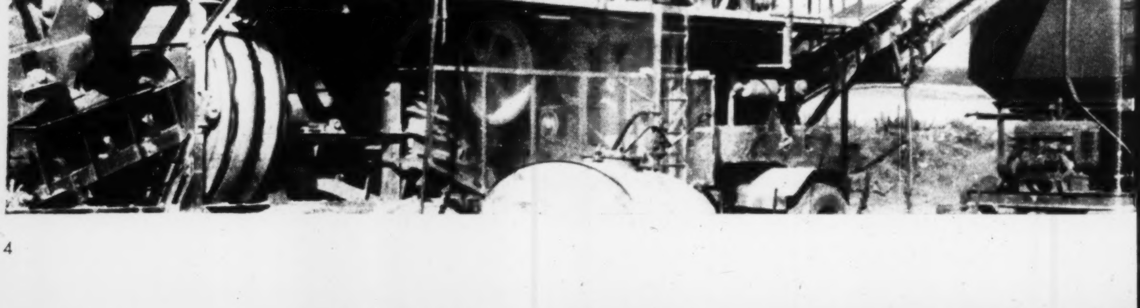
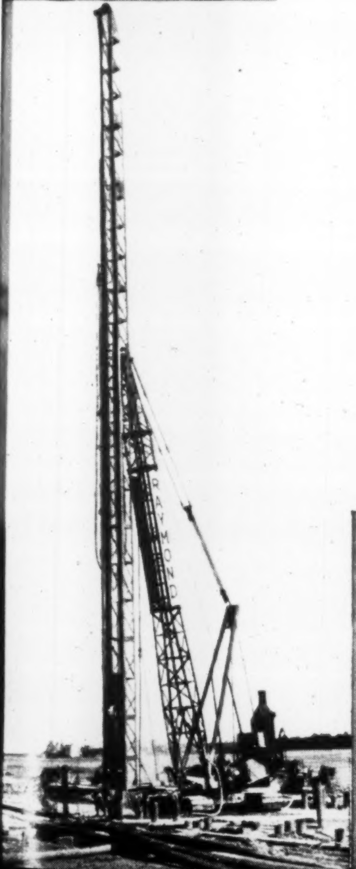
"I like it the best of any engine we have had — wish we h one on the shovel," says the job superintendent about t Allis-Chalmers Model 844 diesel powering this crusher.

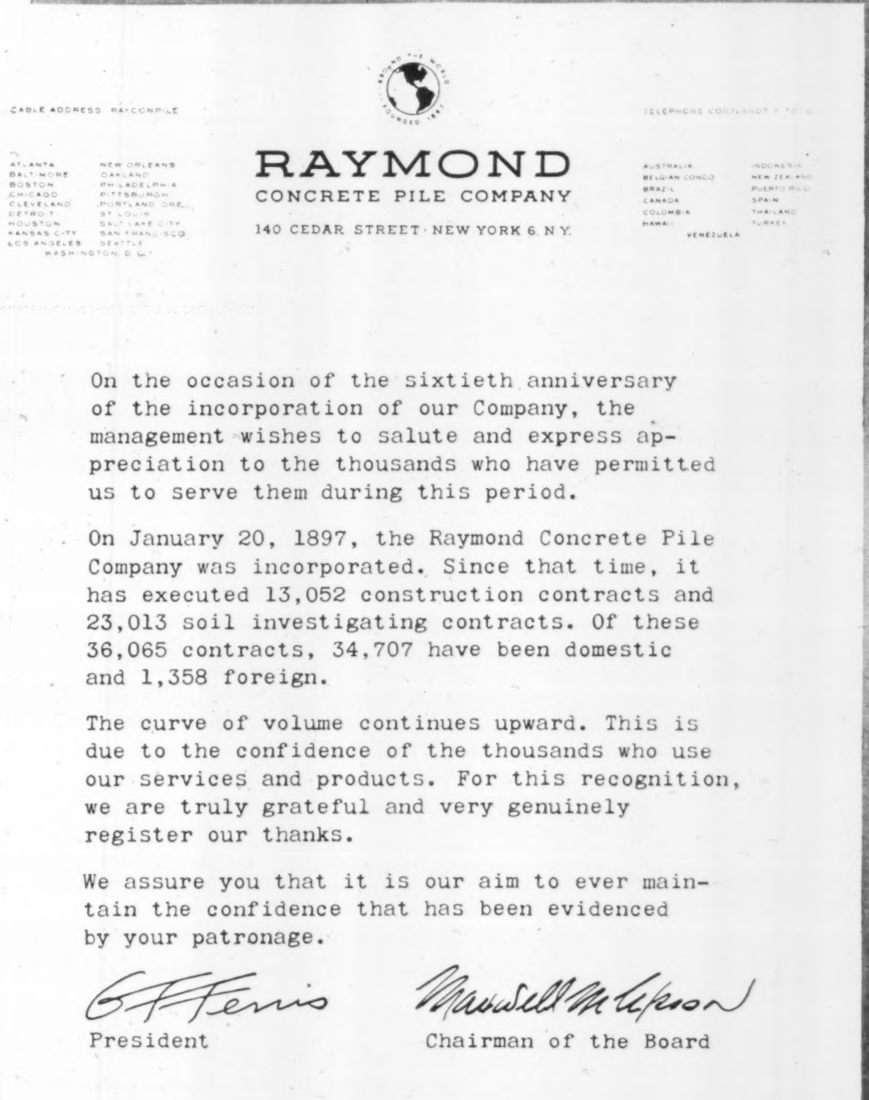


One of Raymond's earliest e drivers at work in Chicago at the turn of the century.

e job in Detroit, Michigan in with one of Raymond's newest nd largest drivers—a 186' rig.



Our 60th year...



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On the occasion of the sixtieth anniversary of the incorporation of our Company, the management wishes to salute and express appreciation to the thousands who have permitted us to serve them during this period.

On January 20, 1897, the Raymond Concrete Pile Company was incorporated. Since that time, it has executed 13,052 construction contracts and 23,013 soil investigating contracts. Of these 36,065 contracts, 34,707 have been domestic and 1,358 foreign.

The curve of volume continues upward. This is due to the confidence of the thousands who use our services and products. For this recognition, we are truly grateful and very genuinely register our thanks.

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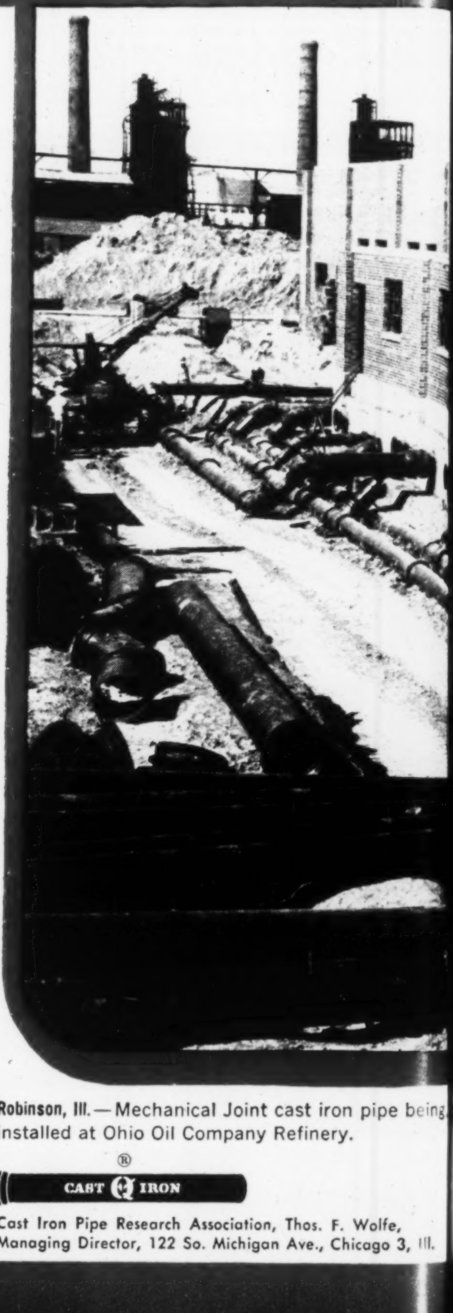
But no matter where or how it's used, cast iron pipe delivers the rugged strength whose service life is measured in centuries.

For information, write: Cast Iron Pipe Research Association, Thomas F. Wolfe, Managing Director, 122 So. Michigan Avenue, Chicago 3, Illinois.



Robinson, Ill.—Mechanical Joint cast iron pipe being installed at Ohio Oil Company Refinery.

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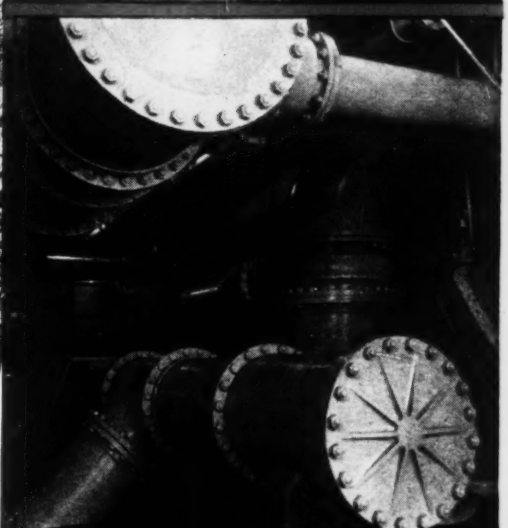
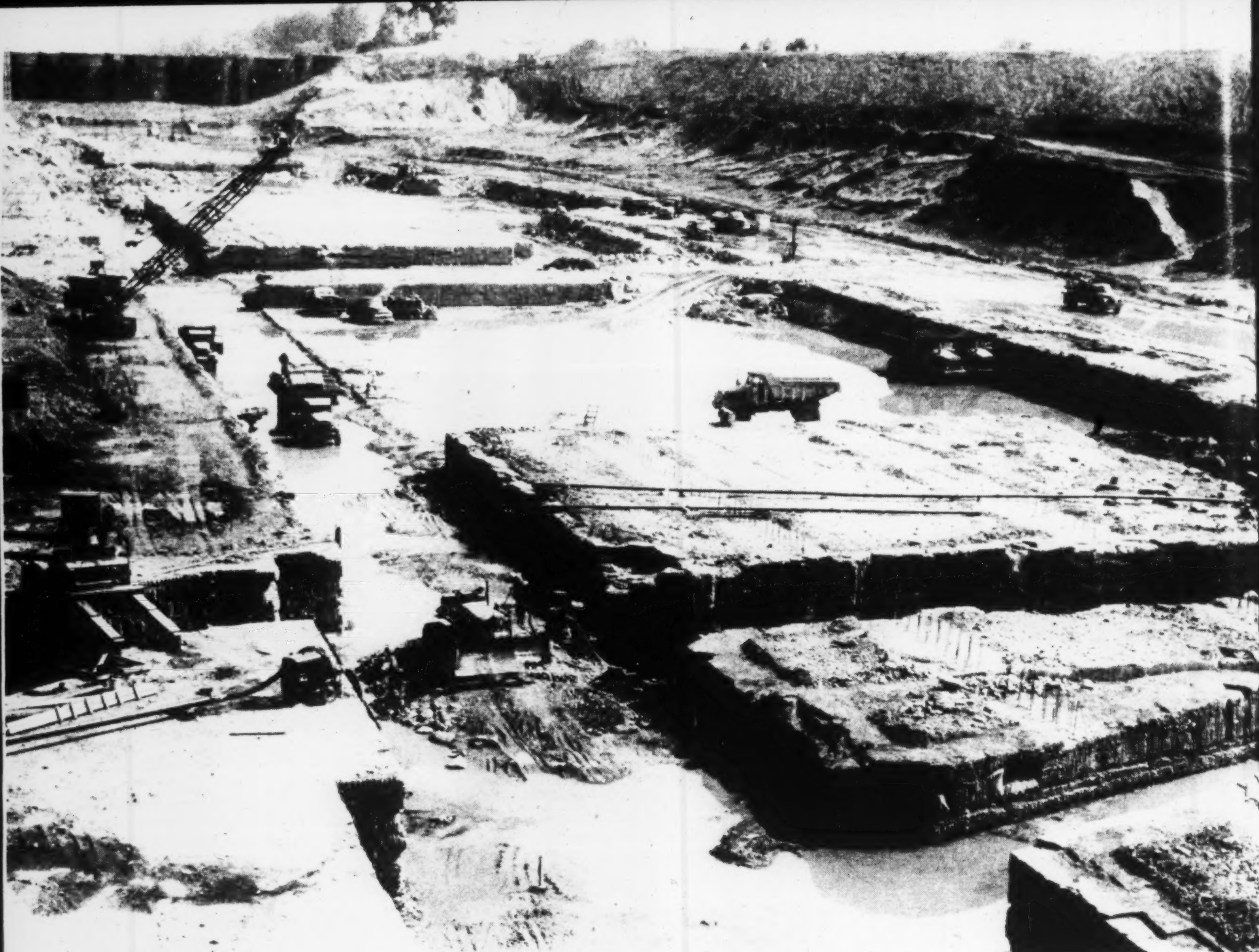
Chicago Heights, Ill.—Cast iron pipe being installed to supply water for plant of Victor Chemical Company.

International Falls, Minn.—Installation of flanged cast iron pipe and fittings in filter plant of Ontario Paper Co.



SERVES FOR CENTURIES...



Greenup, Ky., dam site project on the Ohio River. Photo, courtesy U. S. Corps of En

NEEDED: Walls, 26′ straight up—

and how a Du Pont Blasting "Team" handled the job!

Helped prevent overbreak, control throw, minimize vibration at Ky. dam site project

Ever faced with a pinpoint blasting job? See if you can match *this one*—faced by Porter-DeWitt Construction Co. at the Greenup Locks & Dam Project, Corps of Engineers, U.S. Army, Greenup, Ky.

It called for excavation of the main lock walls, lower miter-gate sill and laterals for the filling and emptying system—*for vertical walls up to 26′ high!* In laminated shale, too!

To tackle it, Porter-DeWitt (Poplar Bluff, Mo.) used line drilling plus a Du Pont "team" of Special Gelatin 40%, MS Delay Caps and a CD-48-1 Blasting Machine. The results: clean-cut walls, with overbreak and throw held to a minimum. And thanks to the "CD," permanent firing lines and blasting generators were "out," and every shot went off with "Ready—fire!" smoothness. Maximum safety and speed all rolled into one!

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Reader Comment

Adequate Cement Supplies

SIR—Since you reported in the Washington Observer columns of your Dec. 13, 1956, issue that "Cement shortages ahead may be more severe than earlier estimates indicate" (conclusion from report of the House Small Business Committee), we think you should also report opposite findings, especially when fully documented and based on equally detailed study.

One such opposite finding is contained in our press release of Sept. 27 (see below). The figures on capacity and capacity increases are presented in terms of total annual shippable volume rather than as computed capacity. Such figures are of record and, therefore, wholly reliable. As to our estimates of consumption trends we cannot claim that they are infallible, but we do emphasize that they were made with great care.

Unfortunately, these figures are for only our own 18-state mid-western and southeastern market. However, trends elsewhere should closely approximate those for the 18-state section. On this basis we project for 1957 a country-wide capacity of 380 million barrels, and a consumption of 321 million barrels.

One basic fault with the report of the House Small Business Committee is that it estimates maximum production at 90% of capacity. Actually, the industry averages much higher. Another fault is that the report is based largely on 1955 data. The conclusions would be different if current data were used.

W. A. WECKER
President
Marquette Cement Manufacturing Co.
Chicago, Ill.

EDITORS NOTE: The press release contained tables showing state by state figures on cement manufacturing capacity (measured in shippable volume, as Mr. Wecker notes above) and on estimated consumption. In summation Mr. Wecker pointed out "that the capacity of the cement plants serving the 18-state area was 124 million barrels in 1955, and will rise 27%, to 157 million, by the end of this year (1956). Con-

Engineering News-Record welcomes expression of opinions from its readers. Comment should be as brief as possible and pertinent to subjects of current construction importance. Letters should be addressed Editor, Engineering News-Record, 330 West 42nd St., New York 36, N. Y.

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sumption in 1957, on the other hand, is expected to rise only 10% over 1956, to 118 million barrels. And by 1958 capacity will be up 33% over 1955, to 164 million barrels, while consumption is expected to increase only about 15%, to 124 million."

Mr. Wecker stated further: "The facts further indicate that the augmented requirements for new highway building and all other building needs will be more than met for years to come by the new enlarged capacity. The cement industry has been aggressive in committing millions of dollars to expansion of its facilities and has, it appears, fully anticipated future needs. In fact, the industry may prove over-expanded in our area as well as in other areas of the country."

Ponte Santa Trinita

Sir—I read with great interest the article on the rebuilding of Ponte Santa Trinita in Florence (ENR Dec. 20, 1956, p. 49). It is true that Florence suffered the loss of all its river crossings except the Ponte Vecchio, but when the American Army moved in temporary steel military bridges were built replacing the bridges which had been destroyed.

I do hope that you will give us a photograph of the Ponte Santa Trinita after it has been completely restored. Perhaps your photographer will be able to show us Dante meeting Beatrice on it.

J. Joseph Callaghan
Chestnut Hill, Mass.

CALENDAR

American Road Builders Association, annual meeting and road show, Chicago Amphitheater, Jan. 28-Feb. 2.

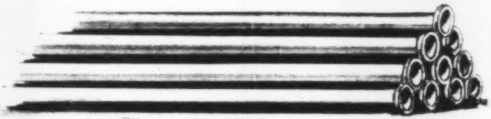
Reinforced Plastics Div., Society of the Plastics Industry, Inc., 12th Annual Technical and Management Conference, Edgewater Beach Hotel, Chicago, Ill., Feb. 5-7.

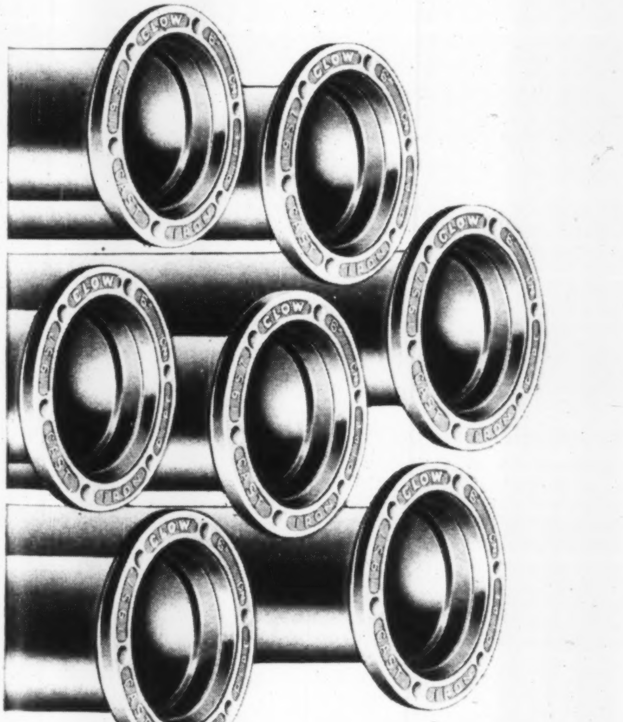
Eastern Snow Conference, 14th annual meeting, Onondaga Hotel, Syracuse, N. Y., Feb. 7-8.

National Society of Professional Engineers, spring meeting, Hotel Francis Marion, Charleston, S. C., Feb. 15-16

Washington University Civil Engineering Dept., conference on good concrete and role of admixtures, Brown Hall Auditorium, Washington University campus, St. Louis, Mo., Feb. 16.

take advantage of the plus factors when you specify UNDERGROUND WATER PIPE





Experienced men who specify and install underground water pipe take advantage of the plus factors when they specify cast iron pipe.

Take the pressure plus factor. Minimum wall thickness Clow cast iron pipe (ASA A21.6 Class 22) is rated for at least 250 psi working pressure in diameters 10″ and smaller.

What does this mean? It means that cast iron pipe is rated safely above the minimum pressure requirements for municipal water service, and can be specified to the full ASA rated working pressure. This is because of the inherent strength of cast iron pipe . . . beam strength . . . compressive strength . . . bursting strength . . . all scientifically calculated with ample factor of safety on the basis of sound engineering practice and the result of actual service records.

To get the best advantage of the plus factors for your system, invite a Clow man in to discuss your requirements when pipe first enters your plans.

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SINCE 1878

Never a minute's downtime due to Torque Converter trouble on Petrillo's big A-C Tractor fleet!

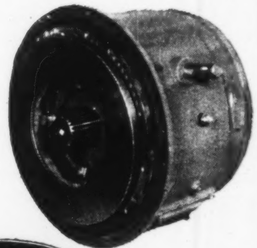
When it comes to torque converter-equipped crawler tractors, few contractors can claim the experience of Edward J. Petrillo, president of Yonkers Contracting Company, Inc., Yonkers, N. Y. He's been advocating torque converter drives ever since Allis-Chalmers first introduced them for heavy-duty tractor use back in 1940.

There's good reason for Mr. Petrillo's use of torque converter drives. Says his Chief Purchasing Agent & Equipment Manager, Charles S. Campello: "Our Allis-Chalmers HD-21's, and their predecessor HD-20's and 19's, have never been down due to torque converter trouble—and we've used them on some of the biggest, toughest jobs in the East. All we ever do is give them normal field maintenance, which consists of checking the torque fluid level and conventional lubrication. Time required for this is insignificant."

Currently Mr. Petrillo has more than 50 A-C Crawler Tractors equipped with A-C torque converter drives. And, of course, A-C standardizes on Twin Disc Torque Converter components. But there's much more than just trouble-free operation behind his choice of torque converter drives. Production-wise, the torque converter automatically matches output torque to load conditions—with minimum or no gear-shifting . . . cushions out shocks and vibrations to reduce parts wear and breakage . . . and provides accurate load control.

Put a torque converter-equipped machine on your next job—particularly where operating conditions are really rough. See for yourself what Twin Disc Torque Converter drives can do for *you*!

Working with scrapers, these A-C HD-16's use torque converter drives (optional). Current HD-21's use torque converter drives as standard . . . but with either model the torque converter components are Twin Disc's.



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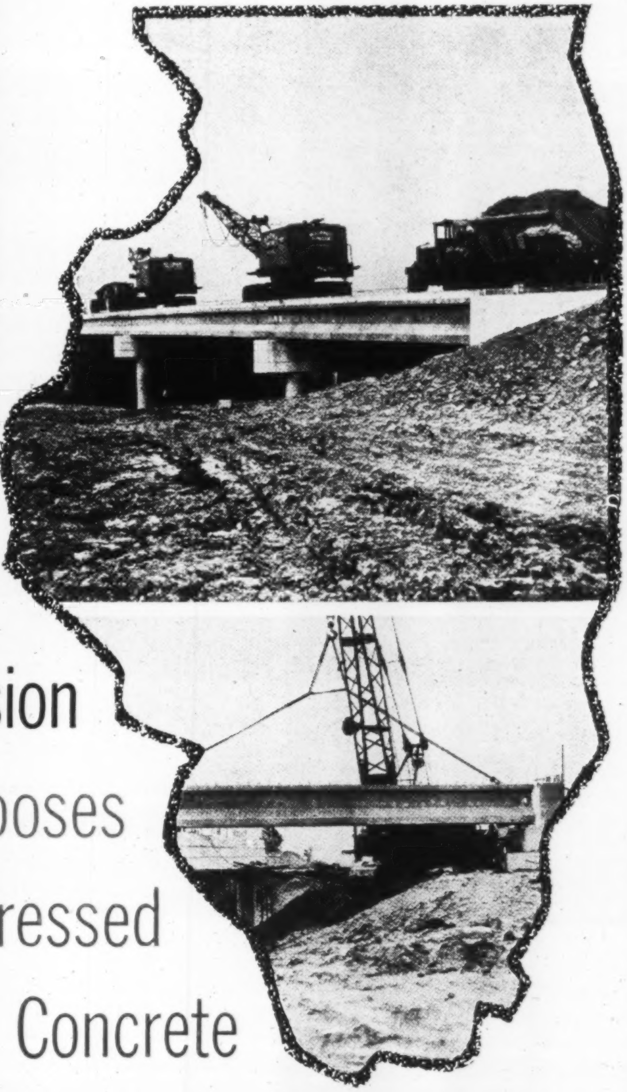
Illinois State Toll Highway Commission chooses Prestressed Concrete for 212 Bridges!



Overload test of Beverly Road Bridge. Four spans, continuous under live loads, center to center of piers measured along center line of girders are: 42'-10"; 70'-5"; 70'-5"; 42'-10". Skew is 20°. Precast prestressed I-section girders—without intermediate diaphragms—are 48" deep and placed 7'-6" center to center. Precast, pretensioned 2½" deck slabs were placed on the girders with a 5" slab poured on top. Intermediate piers are 36" diameter prestressed hollow piles with 4" walls.

Girders and 2½" slabs for the test bridge made by Prestressed Concrete Structures of Frankfort, Illinois, using Roebling 7-wire stress-relieved strands.

Placing 42'-10" span girder on Beverly Road Bridge.

Write for your free copy of Roebling's 16-page booklet, "Tensioning Materials for Prestressed Concrete."

This choice is the result of exhaustive research together with testing of the continuous type of prestressed structure which was adopted. Initial cost, efficiency, delivery and maintenance were factors that governed the final choice . . . and each was more successfully met by prestressed concrete than any other type of bridge.

The initial cost of the prestressed concrete design is appreciably lower than with existing alternate designs and materials.

Dynamic tests on the Beverly Road Bridge proved conclusively that the prestressed method means less vibration and deflection under high-speed traffic – two factors which are cause for increasing complaints on other types of bridges.

The faster delivery (first bridge will be delivered about 5 months after bidding) will reduce cost of other construction operations because these bridges can be used for access to uncompleted highway sections. Highway can begin collecting tolls on completed sections sooner.

Prestressed concrete requires no painting – repair and maintenance costs are less. The 212 bridges in the Northern Illinois Toll Highway will have a total of 6300 prestressed girders varying in length from 40 to 90 ft. Bridges are designed by Joseph K. Knoerle and Associates, Inc., Baltimore, Maryland.

For data on tensioning elements, casting yards, fabrication methods, design procedures and other prestressed concrete information, write Construction Materials Division, John A. Roebling's Sons Corporation, Trenton 2, New Jersey.

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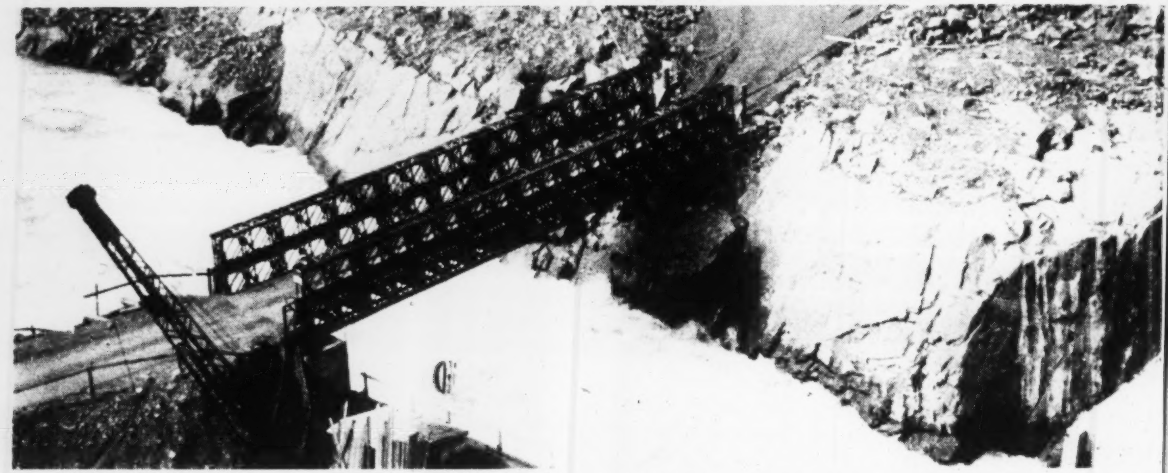

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- Practically 100% salvageable
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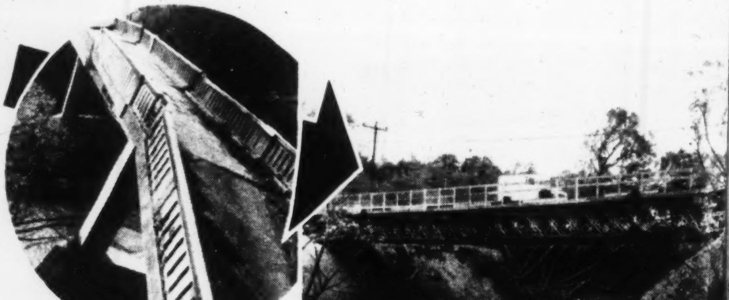
- Right:—Application of two-lane, flush deck replacement for storm damaged permanent structure.



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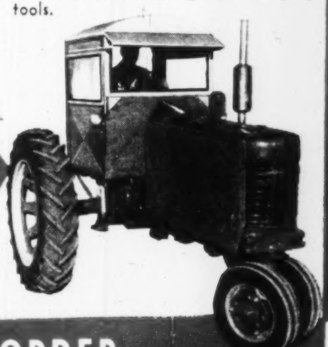
Series "33" for Wheel-Type Wheatland & Industrial Tractors.
Pictured above and to left . . . Big, roomy; taller than average man can stand erect — permits use of most all mounted equipment including Loaders, Back Hoe, ditching and dredging tools.



Series "22" for Row Crop and Tricycle-Type Tractors.
Pictured to right . . . Kab has lower side panels — permits use of mounted equipment such as tool bar, cultivators, Hydraulic Farmhand, Loader and Stacker, etc. Comes with or without heater hood as shown.

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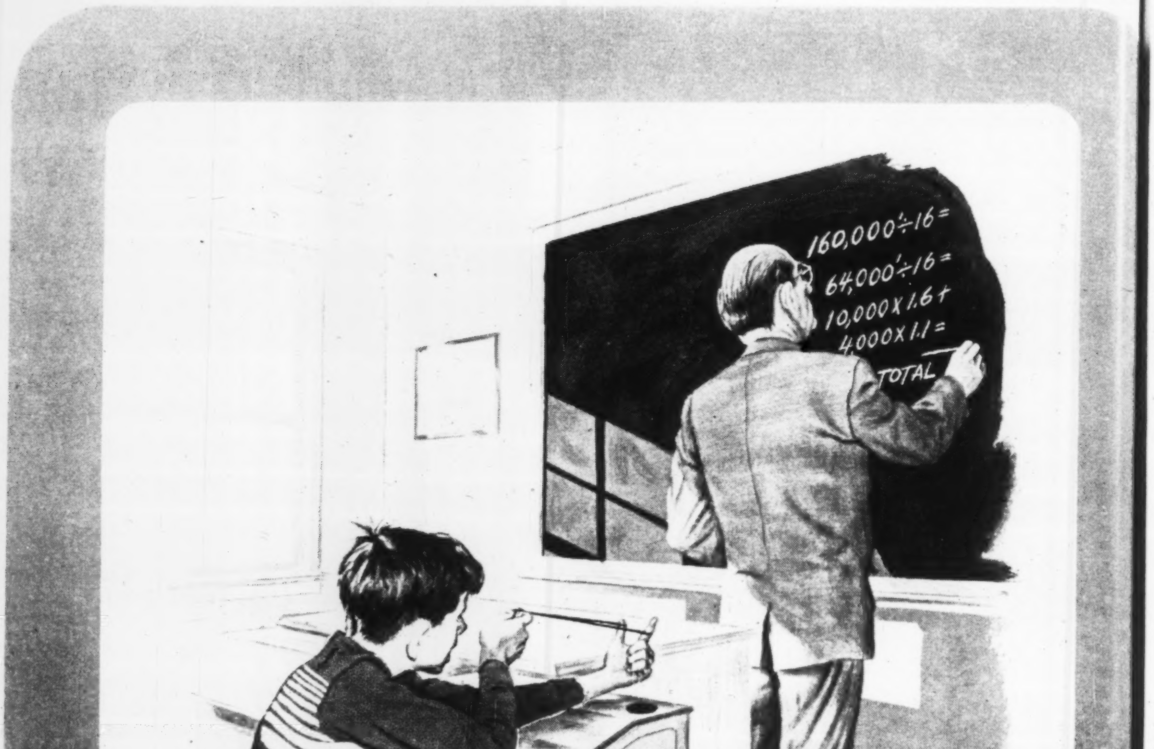

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ENGINEERING NEWS-RECORD
Vol. 158 No. 5 January 31, 1957
Number of copies printed this issue: 77,434

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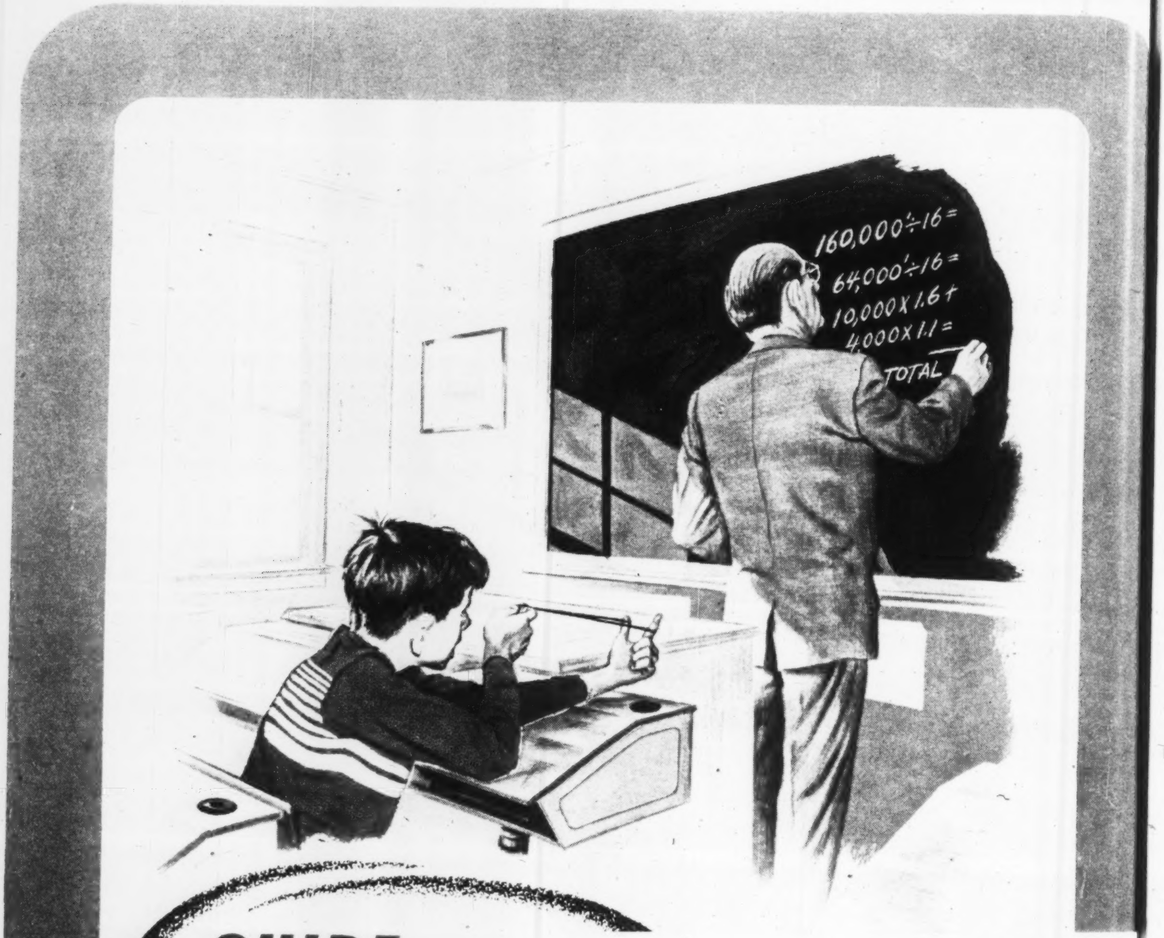

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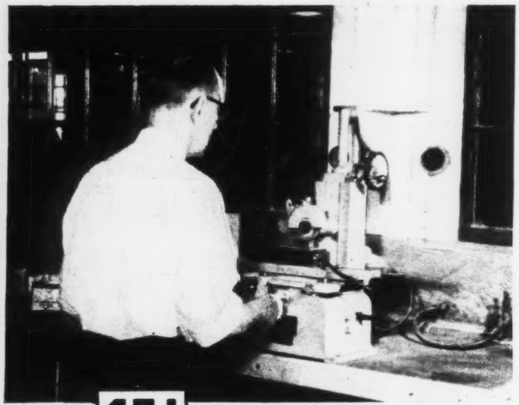

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WASHINGTON OBSERVER

The housing industry finds no great hope for an upturn in the President's rundown of his specific programs for the next four years.

The Council of Economic Advisers foresees a further downturn in housing starts—but there's no tone of alarm in the way they discuss this.

The Administration does make proposals to help housing—but these are directed more toward keeping the decline from becoming sharper.

The reason given is that other construction will climb—including public works—thus absorbing practically all the materials and manpower that's available. While they don't want housing to be a political liability, top officials are willing to hold off in case they need to stimulate housing in the face of a business decline sometime in the future.

The Administration still sees housing starts at around 1 million per year, give or take a few—and this level suits their purposes fine.

•

The AFL-CIO meeting in Miami this week is sharpening up a fight between Reuther of the auto workers and the building trades over which should do construction work inside an industrial plant. George Meany, AFL-CIO chief, has a proposal calling for arbitration of disputes; but the building trades are dead set against this (see page 78).

Another proposal would ban one union's boycott of another's product as the sheetmetal workers are now boycotting products made by the steel workers. The building trades are lining up with the sheetmetal workers.

All in all, the outlook is for more jurisdictional fights rather than less. Dave Beck of the teamsters is fanning such arguments as one way of taking the spotlight off racketeering in his union.

•

There'll be a new man taking over John Dunlop's job soon. The man who has been chairman of the National Joint Board for Settlement of Jurisdictional Disputes—for the building trades—is resigning as of Mar. 1. Dunlop, who teaches labor economics at Harvard, will spend several months working with his successor.

Dunlop wouldn't give a specific reason for leaving the job he has held eight years. But, he is said to be disillusioned with the willingness of both the building industry and labor to rock along as they have for years. Also, Richard Gray, head of the Building Trades Department, made life difficult for him.

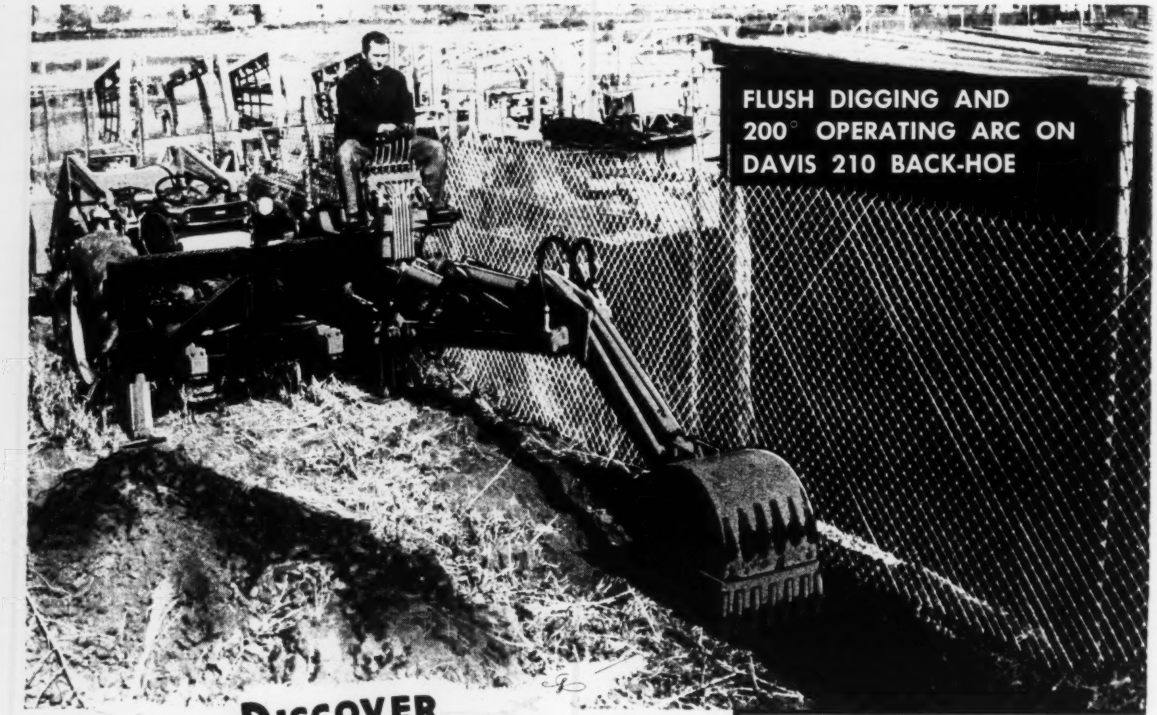
•

Interior Secretary Seaton has moved into the Pleasant Valley Dam situation. He's asked the FPC to hold up proceedings already under way in which private utilities are seeking a license to build two low dams downstream on the Snake River from the Hell's Canyon development.

Seaton wants to study further to see whether a high dam isn't called for at Pleasant Valley. Seaton's next step—which may be months off—could tip the site to a federal project.

•

Criticism of U.S. air base installations at home and abroad is one of the major points in this week's report by Sen. Symington's armed services subcommittee on the Air Force. The report says: (1) an insufficient air base structure, affords neither the alert status, nor the dispersal necessary for security; (2) continental security is in a dangerous state because of the current deterioration in our overseas base structure; (3) inadequate housing and inadequate pay scales are decreasing the effectiveness of the armed services.



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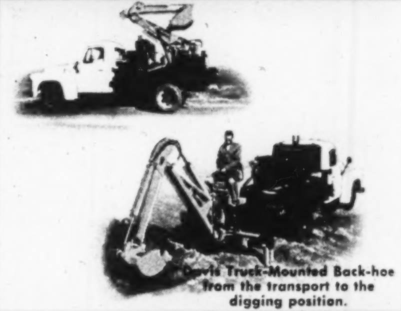
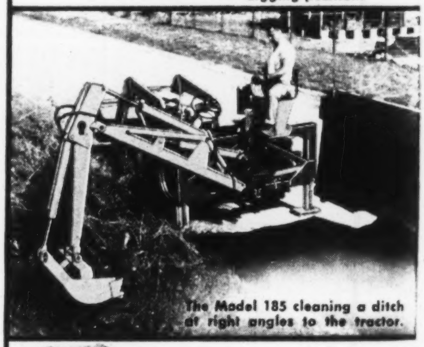


Davis Truck-Mounted Back-hoe from the transport to the digging position.

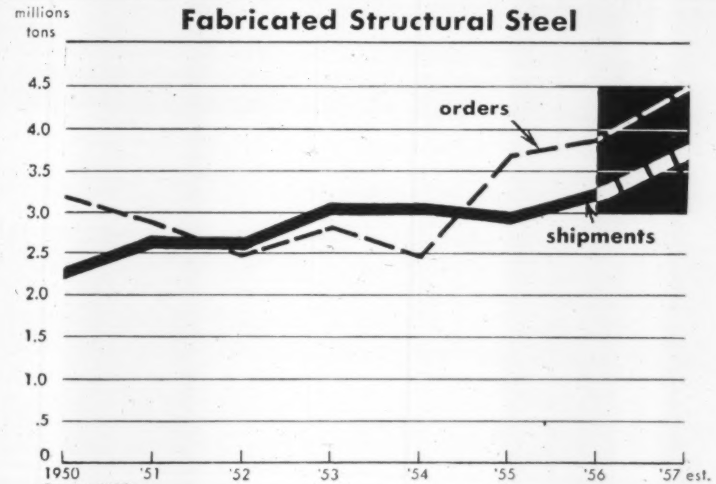


The Model 185 cleaning a ditch at right angles to the tractor.

The streamlined Davis Loader on John Deere 420 Crawler Tractor.

Steel:

Despite the fact mill capacities are increasing to a record 133 million tons this year . . .



Fabricated Structural Steel

Source: AISC

. . . Demands from backlogs and new orders for construction projects will again outrun production. Though expanding as rapidly as possible, steel companies can't catch up. This means the . . .

Steel Shortage Will Get Worse in 1957

The steel shortage plaguing the construction business probably will get worse in 1957, even though shipments of fabricated structurals will be up substantially.

Because of an increase in capacity predicted by the industry for this year, fabricators hope to increase total shipments by some 14% over last year, reaching a total estimated tonnage of 3.8 million tons this year.

Prices, already nudged upward by higher charges for "extras," are sure to get additional boosts as the industry seeks to get the necessary money for its planned billion-dollar expansion.

The Administration's decision to end tax aids for steel expansion has put the industry in the middle. To go ahead with its plans, it necessarily will have to seek other sources of money, and a price increase is sure to be part of the method used.

Going into 1957, the industry had a backlog of some 3.25 million tons in fabricated steel orders. Although the expected increase in output will help some, it won't have any appreciable effect on the overall construction picture.

In a Congressional hearing last month, a representative of the American Institute of Steel Construction issued the following forecast of expected annual increase in production of steel sections. These tonnages started becoming available in the second half of 1956, and will be fully available by the end of 1959.

Total expected increase:

	Structural Tons	Plate Tons	Total
U.S. Steel	400,000	500,000	900,000
Bethlehem . . .	800,000	360,000	1,160,000
Inland	70,000		70,000
Other producers	200,000	200,000	400,000

Probable total to the fabricating industry of the structural will be about 63% or 925,000 tons; of the plate, about 31% or 325,000 tons.

Contractors are concerned over the extended deliveries now being quoted. When backlogs increase and deliveries lengthen, buyers of structural steel come into the market to cover their forward requirements, and therefore, new contracts actually are generated by the existence of these extended deliveries.

There are fabricators in the country

who have refrained from selling their expected steel receipts and fabricating capacity for long periods ahead and these fabricators can now give normal or near normal deliveries.

According to recent studies, the volume of new orders for fabricated steel will exceed shipments to fabricators by the mills during the first half.

It is expected that in the third quarter of 1957 steel rollings for shipment to fabricators will exceed new orders for fabricated steel, and that the backlog will begin to decrease.

The industry has not yet felt the impact of Bethlehem's production. Bethlehem's structural mill was completed in 1956 but did not get into full operation until last November. It is expected that Bethlehem will reach its predicted increase of structural sections in early 1957.

Inland Steel is at present increasing its ingot capacity. When this is accomplished, an increased supply of the types of steel used by the industry will be forthcoming. U. S. Steel will start increasing its production of wide flange beams this year, but will not complete the increase until 1959.

According to AISC, the structural steel fabricating industry in 1957 will produce about 3.8 million tons as compared with 3.25 million in 1956. It was pointed out that the expected production of 3.8 million tons of fabricated steel this year, plus the 1.25 million tons by 1959, is greater than some estimates of structural requirements through 1965.

This forecast is predicated on the theory that there will be no drastic effects of the tight money situation, no worsening of the world tension and no major labor disputes.

Despite the crippling 34-day strike last summer, 1956 was the second highest year of production for the steel industry, with some 115 million tons of ingot produced. This was exceeded only by 1955 with 117 million.

Total new orders for structural steel are expected to reach better than 4 million tons, a 4% increase over 1956. With the fabricating industry able to produce only 3.8 million for shipment, it looks as though the 3.25 million tons in backlog orders will rise by another 200,000 tons. This will stretch delivery times possibly even further until the added expansion can catch up.

One bright note for steel construction is the capacity added by the basic mills during 1956. This has increased rolling capacity by 16%.

An additional strain on the supply of fabricated steel is coming from the shipbuilding industry, which is experiencing its biggest year since the end of World War II. Coupled with the demands from freight car manufacturers, it adds up to another difficult year for buyers of fabricated steel.

Prices at present throughout the nation per hundred weight on structural steel, according to ENR's 20-cities' survey, range from $7.43 in Pittsburgh to as high as $9.15 in Seattle.

This is a general mill average for all types of structural steel.

. . . Congress Hears Steelmakers' Story

The nation's big steelmakers—U. S. Steel, Bethlehem, Republic, Youngstown—went before the Senate Public Works Subcommittee on Roads headed by Albert Gore last week and attempted to allay reports that a shortage of steel will upset progress on the $33-billion highway program.

Clifford F. Hood, president of U. S. Steel Corp., told the committee that supplies of steel, except for structural shapes and plate, were adequate at present. The bottleneck on shapes and plate should be broken within the next couple of years, he said.

Anticipating an upsurge in the demand for this steel over the next several years, Hood told the legislators that steelmakers had begun expansion programs that would add almost 3 million tons of extra capacity for the industry by the end of next year. Total production of this type of steel is expected to amount to more than 15 million tons this year, Hood said. This would be an increase of nearly 50% in production over the demand for this steel only a little more than two years ago.

The committee was told by Gen. Louis W. Prentiss, executive vice president of the American Road Builders Association, that the total steel requirements for highways this year will be 23 million tons, about 200,000 tons more than was used last year.

The Senate committee indicated that it was not complacent about the availability of steel and served notice that more would be heard on the subject. For one thing, Senator Gore said that he plans to go into the steel prices. He expressed concern over reports of black market activities. Mill prices for steel structurals and plate have increased some 12% in the last 18 months, Hood said.

But Senator Gore said he had reports that buyers paid more than twice the mill price, if they bought on the open market.

Indications from the hearings are that the committee is letting the big steelmakers talk for the record. It may call them back after contractors and jobbers have had a chance to tell their side of the story.

New Niagara Bill

Moses and Niagara-Mohawk agree on new Senate bill

The annual fight in Congress over development of the Niagara power site was joined this week when divergent Republican groups united behind a modified public power bill. Senate Democrats already have introduced a bill, identical to the Lehman bill that passed the Senate last session.

The move this week ends earlier efforts toward development of the power by five New York private utilities. Both the Republican and Democratic bills provide for the Power Authority of the State of New York to build the site and market the power, at no cost to the federal government. The main difference between the bills—and the point of conflict—is that the Democratic bill contains a federal preference clause.

Agreement on the Republican bill was hammered out last week in the office of Sen. Irving S. Ives at a meeting attended by Robert Moses, chairman of the New York Power Authority; Earle J. Machold, president of Niagara-Mohawk Power Corp.; H. Edmund Machold, chairman of the board of Niagara-Mohawk; Sen. Jacob Javits, Rep. William E. Miller and Sen. Ives.

Ives and Javits are expected to introduce their bill this week.

Representative Miller had led the fight for private development in the past, but he and Niagara-Mohawk joined the New York Power Authority approach as a result of the loss of generating capacity caused by the slide that partially destroyed the Schoellkopf plant. Miller will introduce an identical bill in the House.

The Ives-Javits bill will direct the Federal Power Commission to issue a license to PASNY to develop approximately 2 million kw of power, of which 445,000 kw will be assigned to Niagara-Mohawk. The firm is now licensed to develop this amount of hydro power from its existing license. In return, Niagara-Mohawk will agree to give up existing riparian and water rights it enjoys under its present license. This license expires in 1971, but the new allocation would be for the life of the 40-year bonds that will finance the project.

The project, to cost $600 million, would be financed by a bond issue by PASNY. The authority already has borrowed $375,000 for preliminary work and would need to borrow between $50 million and $60 million to get the project going before bonds are floated, according to Moses. Once authorized, the project would take about three years to build.

STEEL HOUSE and a host of new building products vied with mortgage problems for the attention of homebuilders last week as . . .

Worried NAHB Seeks Easier Credit

A program designed to increase the amount of money available for home mortgages was forged at the 13th Annual Convention-Exposition of the National Association of Home Builders in Chicago last week.

The NAHB board of directors called for an immediate readjustment in the GI interest rate and increased funds for the Federal National Mortgage Association.

Though the week-long program placed heavy emphasis on the solution of problems arising from tight mortgage money, the homebuilders, nevertheless, also devoted considerable time to examination of building products and prefabricated houses on display in the exposition. And they held sessions on such diverse topics as tax problems, ways to cut construction costs, better wiring design, air-conditioning developments, plastics in homebuilding, how to get into urban renewal building, how to sell better, remodeling opportunities, better landscaping, labor problems, and water and sewerage systems for subdivisions.

New officers were elected. George S. Goodyear, of Charlotte, N. C., replaces Joseph B. Haverstick, Dayton, Ohio, as president. Nels Severin, San Diego, Calif., was chosen first vice president; Carl T. Mitnick, Merchantville, N. J., second vice president; Martin L. Bartling, Jr., Knoxville, Tenn., treasurer; and John Bauer, Indianapolis, secretary.

• **What to do about tight money**—in announcing the new NAHB program, outgoing president Haverstick said that money for veterans' housing has virtually disappeared from the market and where it is available, builders must pay exorbitant discounts to obtain it. The VA rate, set by Congress, is 4½%, whereas 5% is the rate that has been authorized recently for FHA-insured mortgages.

Haverstick noted that raising the VA rate to parity with FHA was not likely to increase greatly the amount of money available for mortgages. But, he argued, the program would induce FNMA to raise its price for VA-guaranteed loans to the same levels now offered for FHA-insured mortgages. (FNMA provides a major secondary market for home mortgages.)

Haverstick said that unless Congress acts immediately, FNMA will be completely out of funds to purchase mortgages. So the NAHB program also seeks to increase by $2.5 billion the funds that FNMA would be authorized by Congress to obtain from the private money market. This would be done by increasing its Treasury-owned stock by $250 million, since there is a 10-to-1 ratio between the amount of debentures FNMA can issue and the amount of stock held by the Treasury.

GEORGE S. GOODYEAR, new NAHB president, will administer the program seeking an end to the mortgage crisis.

The program approved by the NAHB board of directors also proposed an increase of $2 billion in FNMA special assistance funds for the purchase of mortgages under FHA Section 203 and VA Section 501 in geographic areas and market ranges where funds have not been available on reasonable terms. These sections cover single-family and one-to-four family houses.

• **NAHB proposals**—The association issued an 11-point policy statement for 1957 incorporating the proposals for equalizing VA and FHA rates. It also urged:

• Lending institutions to avoid "unconscionable charges."

• Congress to revise FHA's minimum down-payment schedule and mortgage limit and extend GI loan rights for World War II veterans; re-examine the nation's financial and credit structure to determine its adequacy in today's economy; remove the $15,000 limitation on mortgages eligible for sale to FNMA; make tax deductible all expenditures for home repair and maintenance in excess of 3% of the owner's income; eliminate federal public housing; and not to approve legislation that would weaken the secondary boycott provisions of existing laws, but rather to strengthen them.

• Federal and local governments and mortgage lenders to cease discouraging construction of homes at prices the mass market can afford—through burdensome local zoning, building and subdivision regulations; exorbitant financing costs; high land costs; and the unnecessary constant increases in FHA and VA requirements that are inevitably taking homebuilding beyond the reach of the average American family.

- FHA to re-examine realistically its entire approach to financing of modest rental housing.

The policy statement also urged high productivity: "We of the NAHB, with its 40,000 membership, oppose restrictive practices which delay or prevent technological advances, new methods of construction and development of new materials."

• **Hopeful note** Some encouragement was given the homebuilders by Albert M. Cole, U.S. Housing Administrator:

"I will direct my full effort," he said, "toward obtaining appropriate flexibility in the interest rate of government-backed mortgage loans. If the FHA and VA systems are to work—that is, if they are to be effective in stimulating private investment in home mortgages, the rates permitted must be competitive.

"They must be rates high enough to let the government-backed mortgages compete in the capital market with current yields on other forms of long-term investment. Since in a free market, the effective yield on capital will vary from time to time, some mechanism needs to be set up for a realistic adjustment of the interest rates permitted on FHA and VA-assisted mortgages. . . ."

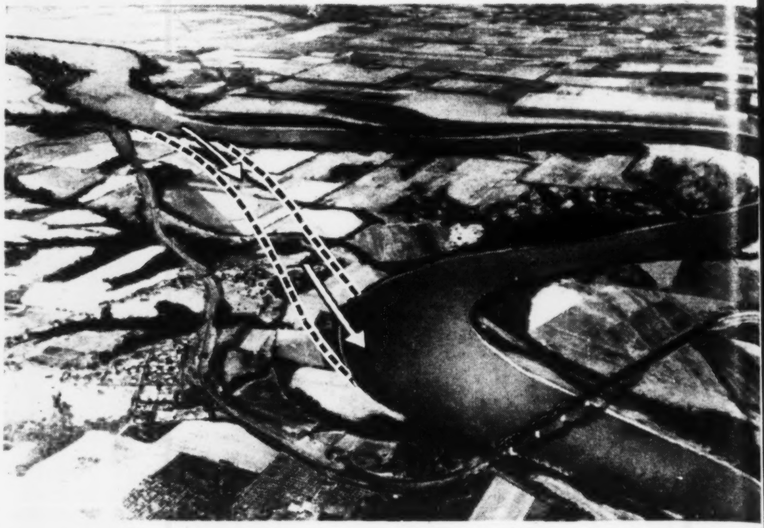
Sen. John Sparkman called attention of the homebuilders to proposals that if adopted would make more mortgage money available—use of the National Service Life Insurance Trust Fund, union retirement funds and other trust funds created by private institutions.

• **New products**—Homebuilders attending the meeting were able to get a good idea of building products that would be available in 1957. These were displayed in nearly 800 exhibits covering almost six acres of floor area. In addition, several manufacturers erected and opened for inspection complete, prefabricated houses—including one on a barge on the Chicago River.

Kitchen and bathroom equipment showed a continuation of the trend to color. Kitchen displays emphasized built-in ranges, and some manufacturers showed island counters.

Hardware manufacturers showed new shapes. In doorknobs, in particular, a trend appeared to be developing toward combinations of metallic and nonmetallic materials.

Among the prefabricated houses were two new models made by U.S. Steel Homes in a new plant at Harrisburg, Pa. These were noteworthy because they have light-gage steel framing, gables, fascia, soffit, trim and interior doors.



New channel for the Missouri River . . .

Jackass Bend to Get 1.7-Mile-Long Cutoff

Jackass Bend, so named because it has made jackasses of pilots ever since there were steamboats on the Missouri River, soon will be no more.

Work began last week to cut through the neck of the bend, which is located near Sibley, Mo., and form a 1.7-mile long, 900-ft-wide new river channel. The resulting cutoff will be 2.6 mi shorter than the present distance around the bend.

The Corps of Engineers' project, to cost $1 million, involves excavation of 1.6 million cu yd of material. The job of moving the river into its new channel will compare in scope with the cutoffs at St. Joseph, Mo. and Liberty Bend near Kansas City—and the one that swung the Missouri River back under the "dry land" bridge at Decatur, Neb.

Procedure to be carried out by the Mississippi Valley Engineering & Construction Co. of Memphis will be standard.

The concave side of the new channel will be faced with 250,000 tons of stone, placed in the dry, to prevent erosion. A 100-ft-wide pilot canal will be excavated by dragline for the most part and by dredge for the bottom few feet. Two backup structures of piling and stone will partially block the present channel just below its confluence with the pilot canal. The 4-ft head created will force water down the pilot canal, enlarging it to full channel width of 900 ft. It is expected to take the river a year or 18 months to do this.

When the new channel is completed and Jackass Bend is cut off, a trouble spot that has caused mishaps as recently as 1952 will be gone. In that year, the Minnesota—then the largest boat on the Missouri—sank after it was wrested from the pilot's control and slammed into a pier of the Santa Fe Railroad bridge.

On Second Thought

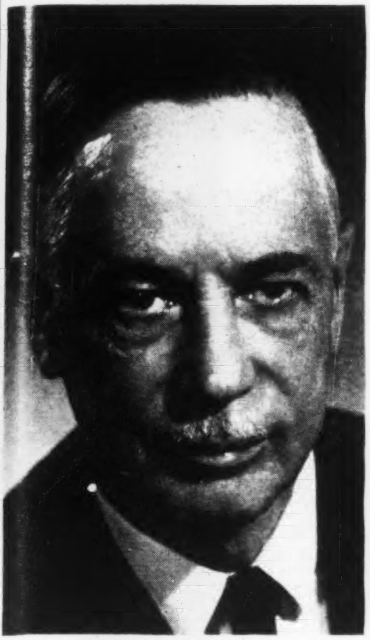
New England states drop St. Lawrence power claims

Massachusetts and New Hampshire have withdrawn their applications for 250,000 and 100,000 kw, respectively, of St. Lawrence River power.

This action came after an engineering report stated that there would be no appreciable economic advantage in transmitting St. Lawrence power—from Barnhart Powerhouse near Massena, N. Y.—into Massachusetts. The conclusion followed comparison of costs involved in bringing in the power, over approximately 310 miles of transmissions lines, with generating the same amount in Massachusetts by extending existing stream stations.

The report—made by Stone & Webster Engineering Corp., Boston—also confirms the New York State Power Authority's position that the economic marketing area is generally within a 150-mi radius of Massena.

The Federal Power Commission consented to the withdrawal of the applications, which were made by the Department of Public Utilities of the Commonwealth of Massachusetts and the New Hampshire Public Utilities Commission.



A. TURNER BONE steps down as head of the Canadian Construction Association.

T. N. CARTER takes over the reins of president at annual meeting in Toronto.

CCA Tackles Its Problems

ENR Staff Report

With an inflation of real proportions growing daily, the Canadian government is officially taking a conservative, go-slow attitude toward public works.

That decision will mean a holdback of government construction work and lead to a number of other actions that will affect their industry seriously, members of the Canadian Construction Assn. were told that at their 39th annual meeting at Toronto last week.

That news—with the background theme of inflation—was the key to the three-day meeting that took up such diverse matters as labor relations, bid-shopping and means of combatting its relations with the federal and provincial governments.

The word of the government's position came from the highest possible source—Prime Minister Louis St. Laurent—and was reinforced by other government speakers who addressed the more than 1,000 construction men attending the sessions. It was further reinforced when the National Housing Association (Canada's FHA) jumped interest rates on mortgage loans to an official 6%.

Current intentions of those planning capital investment for 1957 add up to some 12½% above the high level of 1956, the Prime Minister stated. "This is after allowing for some reduction in housing and is based on an expected increase of about 5% in costs over last year on the average. . . . Such an increase of about 7% in real terms would greatly intensify the present shortages and something will have to yield, either in the competition for funds to finance projects or in the competition for labor and materials to carry them out."

Reaction of CCA members—a mixed group who include general, subcontractors, homebuilders, suppliers and professionals—was generally favorable. CCA officers and members, mindful that their business hit an all time peak of $6.5 billion in 1956, seemed agreed that they were straining at top capacity right now. Government withdrawal would, to some extent, ease the strain put upon the industry by the demands of Canada's booming economy.

There was worry, of course—particularly from the homebuilders, who felt that the increase in the government-approved interest rate would boost actual interest charged in private markets to perhaps 10% and automatically cut out of the housing market many thousands of low income families. Speakers freely predicted that the record 135,000 dwelling units completed in 1956 would be sharply cut in 1957. Some of the general contractors also expressed fear that a general rise in home mortgage interest rates would affect all charges for credit, and would inevitably be reflected in higher construction costs.

However, the government's position, as explained by Prime Minister St. Laurent and others, is simple: the most serious shortage for the Canadian construction industry, at the moment, is not in materials or labor, but in money. U. S. dollars, even now pouring over the border at the 7 to 8% private interest rates, might come faster if the earnings could approach 10%. The same would be true for other foreign investors.

• **Labor problems**—Although the theme of the inflation and with it shortages of nearly everything ran through the meeting, the paradox of construction industry unemployment of significant proportions also was dealt with.

Speakers pointed out that long-held traditions of halting construction work for more than six months during the winter season creates sizeable unemployment in an industry which is now one of Canada's three largest, accounting for about 20% of the country's total labor payroll.

The answer, said CCA, is to promote winter construction techniques that have been developed by the association and by such organizations as the National Research Council. According to reports at the meetings, winter construction work has risen by about 20% during the last year, and the association is looking to at least a 10% rise in this activity over the next few years.

• **Another labor problem**—An outgrowth of the fact that most Canadian construction unions are affiliated with U. S.-based international union organizations is the lack of machinery for settlement of jurisdictional disputes in the construction industry. At the end of their sessions, the contractors endorsed instructions to their officers to investigate the possibility of setting up some sort of a national joint board—possibly with provincial subdivisions—to handle jurisdictional matters within the construction industry.

• **Bid shopping**—Following up fast on the action of a subcommittee, the CCA unanimously endorsed its support of bid depositories such as are now operating in at least 10 major Canadian cities (ENR Nov. 29, 1956, p. 96) as the best means of ending disastrous price squeezing of the sub-trades.

The bid depositories operate on the basis that duplicate bids to general contractors are submitted by the subcontractors, copies going to a depository record as well as to the general contractor. On opening, the actual bid is easily and publicly available for checking, to preclude the possibility of last minute price cutting. It was emphasized that the complete cooperation of architect, engineer, general and subcontractor is necessary to make these plans work.

To further strengthen this plan, the association again affirmed its three-year-old "code of good practice", which enforces orderly handling and treatment of sub-trades.

On the matter of bidding in general, the contractors tabled another motion—with directions for further study—that was aimed at getting local bid openings. Under present Canadian government practice, all bids—regardless of where the physical location of the job may be—are opened publicly at Ottawa, not, as in the U.S., at district or division offices of the government agency concerned. This has resulted, some contractors contended, in an unfair time advantage for bidders closest to Ottawa itself. But after considerable floor debate, it was apparent that the contractors aren't as much concerned with where the bids are opened as they are with regulations concerning the time and circumstances under which amendments to the bids will be received.

• **Highway policy**—Taking note of the huge new federal-aid highway system in the U.S., and of Canada's struggles to complete its own trans-Canada network, the association also adopted a five-page national policy for roads.

In brief, the policy statement degree of cooperation achieved in the U.S. between the federal government and the states on highway matters, and the acknowledgment of federal responsibility for a national roads net.

It suggests a six-step program that would provide: federal appropriations, on a population and vehicle registration basis, to aid the provinces in road work; an auxiliary program of access roads to underdeveloped areas; a national set of minimum standards for federal-aid highways; establishment of a national highways organization—presumably like the American Association of State Highway Officials—to coordinate planning, financing and construction of highways; continuing the authority of provincial highway departments over administration of road projects.

• **Other actions**—During the three-day sessions, delegates also discussed revisions of provincial labor laws to require a secret union ballot on strike votes; changes in provisions of contracts to protect subcontractors in the event of slow payment from the general; and new materials and building techniques—particularly prestressed concrete.

At the final session, CCA elected T. N. Carter of Toronto as its new president, to succeed A. Turner Bone of Montreal.

Three More States Study Water

Two water resource studies completed and one started; Florida study group asks for water development agency

Intensified interest in water problems among the states was further evidenced last week as a Florida commission made definite recommendations; an Indiana committee urged a new law; and a North Carolina agency launched a study of water use.

The three separate state actions were indicative of renewed concern over water matters in practically all states. A developing pattern of use-study, rights-legislation and development-authorization is shown by these actions.

I. Florida

The Water Resources Commission, which has been studying Florida's water supply situation for the last year, will recommend to the state legislature that a new department be formed with broad powers to control and develop the state's water supplies.

The commission will ask for establishment of a new department with regulatory and injunctive powers over water, with the proviso that its rulings could be appealed to the courts.

A part of the proposal is the writing of a new water code, defining state and personal rights to water supplies, but preserving so far as possible "existing rights of water users in Florida" now spelled out in statutes.

Further, it is proposed that the new department be authorized to capture and store waters, including flood waters, and that it have power to regulate water supplies threatened by such things as salt water intrusion.

It was also recommended that the legislature empower some state agency to investigate beach erosion problems, which have become serious and in parts of the Peninsula State.

The Water Resources Commission was created by the 1955 legislature, and statewide study of water problems has been under way for well over a year under direction of David B. Smith, professor of civil engineering, at the University of Florida. A. P. Black, professor of chemistry at the university and a water expert, has said that there is no water shortage problem in Florida; he says the groundwater sources in Florida equal from four to six times the amount of water in all of the Great Lakes. The state averages about 50 in. of rainfall annually.

II. Indiana

Indiana must double its water supply by 1975 to meet demands of economic growth, the Indiana Water Resources Study Committee declared when it recently submitted its report on the results of a two-year study to the state general assembly.

The committee recommended that work continues toward the drafting of a comprehensive water resources law for Indiana; more detailed provisions be made for diversions of surplus flood waters; recodification of the state's drainage and ditch laws be started; a new conservancy district law be enacted to permit financial and management framework for small watershed soil-water programs; continued emphasis be placed on research in cooperation with federal agencies.

The committee emphasized engineering management of stream flows and runoff of rainfall to provide more water throughout the year.

To carry out the studies, the state was divided into 18 watersheds or sub-watersheds. The committee also has directed preparation of a watershed population map to give a clear comparison of growth factors for the entire economy and importance of water in such growth.

III. North Carolina

A statewide survey aimed at collecting detailed information on industrial, municipal and domestic water use in North Carolina has been started by the State Board of Water Commissioners.

Howell R. Peele, the board's chief engineer, is in charge of the study, which is part of the board's long-range plan for gathering material that will be useful in analyzing the state's water problems and developing solutions to them.

The study not only will provide essential data on water use, but will give users an opportunity to outline any problems they may have encountered, and to make suggestions regarding possible solutions. In spite of the fact that North Carolina has a basic abundance of water, steadily increasing demands have resulted in shortages in many areas.

Says W. H. Riley, executive secretary of the Water Board: "The first step in eliminating the shortages is to learn the exact nature of the demands." The current survey is a logical followup of the board's first report issued recently (ENR Nov. 29, 1956, p. 26), which called for a tightening up of state water laws concerning irrigators and well drillers.

High and Light

Light-concrete building sets 254-ft height mark

New York City's tallest lightweight concrete building now is nearing completion at the corner of 42nd St. and Second Ave. Reaching a height of 254 ft above the street, the $4.5-million, 18-story structure also is believed to be the tallest to be built anywhere with a lightweight concrete frame.

Although the new building has fewer floors than another lightweight concrete building now rising in the metropolis (ENR Nov. 29, 1956, p. 26), the latter structure—a 22-story apartment house—misses the height mark by more than 60 ft.

The concrete used in the new building weighs 104 lb per cu ft, about 30% less than stone concrete. The reduced weight was achieved by using an expanded-shale aggregate.

Concrete design strengths are 3,000 psi for beams, slabs and upper-story columns; 4,000 psi for columns below the 12th floor.

Under construction since last March, the project—800 Second Ave.—is complete except for finishing touches.

Net rentable floor space totals about 227,000 sq ft. The building is completely air-conditioned. It is served by six passenger elevators, which can function either automatically or with operators. The exterior finish is glazed face brick.

Column spacing outside the central core of the building is 17½x18 ft in the interior bays, 17½x22 ft in the perimeter bays. Slab construction is one-way metal pan with ribs spaced 20 in. c-c.

Architects for the project are Pomerance & Breines; consulting engineers (structural, mechanical and electrical), Seelye, Stevenson, Value & Knecht; general contractor, H. R. H. Construction Co. All are New York firms.

Cities Report Serious Housing Shortages

A serious housing shortage exists in the nation's cities, according to a Senate Banking Committee survey of 131 municipalities released last week.

The shortage—says Sen. John Sparkman, chairman of the housing subcommittee—affects most low- and middle-income families.

Mayors of the 131 municipalities reported through questionnaires that new construction and rehabilitation of used houses are not keeping up with growing needs. And they also pointed out that the situation was made worse by housing prices going up faster than family incomes. Their report, for instance, shows that middle-income families in 1955 had an average income of $4,422 and could afford a house priced at two to two and one-half times their annual income—or $8,844 to $11,055. But the typical house rose in price during the last three years from $12,300 in 1954, to $13,700 in 1955, and to $14,500 in 1956.

The study also showed that the urban renewal and federal highway programs are aggravating the situation by removing low-cost housing. It was found that whenever access roads are built they almost invariably are located in low-cost housing areas.

• What's the solution?—A recommendation was made by the majority of the mayors that some form of assistance be given middle-income families—such as more favorable mortgage terms or direct loans.

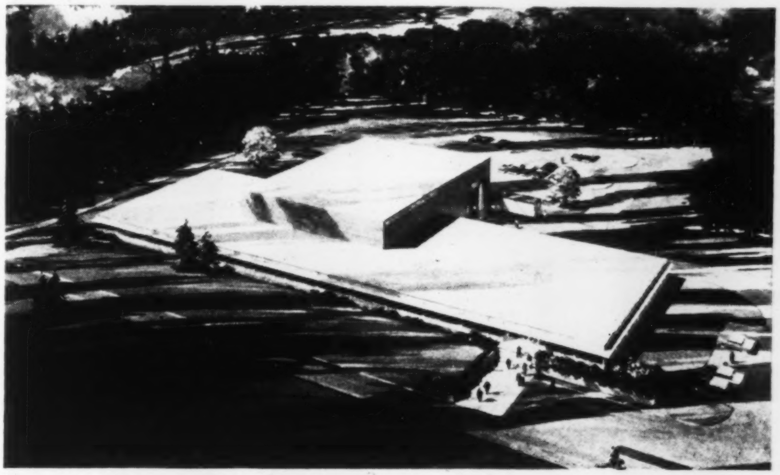
The material from the survey will be used in forthcoming hearings on additional lending authority for the Federal National Mortgage Association. This week Sen. Homer Capehart, ranking Republican on the banking committee, introduced a bill that would have the effect of increasing Fannie Mae's lending authority by $1 billion. (Its present authority is expected to be used up within the next month.) One question certain to be injected into the hearings: Who will the money be intended for—and what segment of the population should the federal government try to help with its loan mortgage guarantee program?

Idaho Gives the Green Light To $60-Million Road Program

The Idaho Board of Highway Directors has given the green light to some $60.5 million worth of highway construction programmed for 1957.

Approximately $30 million will be used to augment the interstate highway system.

The highway department is authorized to go ahead with the projects as soon as time and finances permit. However, only one-third of the work is expected to go under contract this year.



Radiator Firm Plans Research Center

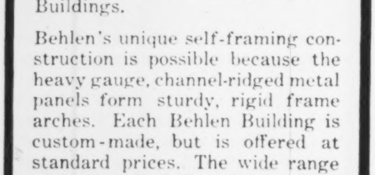
National U.S. Radiator Corp. will begin construction next month on a $1-million heating and air-conditioning research center at Johnstown, Pa. The center will be used also for development of heat exchangers and boilers. Completion is expected early in 1958.

More than one-third of the total floor space of the center will be occupied by the research laboratory. The corporation's general manufacturing staff, general research and engineering staff, and other research units will occupy the rest of the structure.

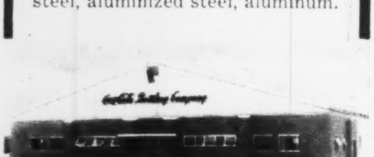
Only
Behlen
buildings
offer single panels
up to 35 ft. long

Build higher and wider buildings faster! Behlen now offers the longest single panels in the industry—up to 35 ft. or longer—for use in erecting Behlen Frameless Metal Buildings.

Behlen's unique self-framing construction is possible because the heavy gauge, channel-ridged metal panels form sturdy, rigid frame arches. Each Behlen Building is custom-made, but is offered at standard prices. The wide range of designs, including the new Flat Top, is available in galvanized steel, aluminized steel, aluminum.



This big 149′ x 101′ warehouse has no support columns to hamper material handling or storage. Buildings also furnished with columns at lower cost.



Here is the new Behlen Flat Top. The channel-ridged panels can be combined with stone, wood, etc., for decorative effect.

WRITE for complete information

BEHLEN Manufacturing Co.
Dept. 28A Columbus, Nebraska

Business Is Good

$12-million port expansion launched by San Francisco

A multi-million-dollar program of port expansion and construction has been launched by the Port of San Francisco to provide new pier and terminal facilities for its booming ocean trade.

The new program will add ship berths and cargo handling facilities to several major piers and terminals. Plans call for:

- A 600-ft extension of two piers to provide more cargo handling space and berthing facilities for the Calmar Line and Isbrandtsen Line. The job will cost an estimated $2.4 million and will extend existing Pier 48 to an overall length of more than 1,200 ft.
- A 150-ft extension to an existing 800-ft pier now assigned to Marine Terminals Corp. This will cost an estimated $400,000.
- Additional covered cargo space and installation of an upper-level passenger ramp to serve the growing fleet of passenger liners and home-berthed cargo-passenger ships. An estimated $900,000 will be spent for this work.

Cost of the modernization was estimated at $12 million by Port Director Charles Tait, who has received approval from the State Harbor Board for immediate preparation of blueprints. Most of the cost of the new projects will be paid out of available port funds, with the remainder expected to come from revenue bonds.

In addition to these immediate projects, port officials are studying the prospect of a $10-million revenue bond issue for other port construction, including a new general cargo terminal.

Two years ago the port issued its first revenue bonds to finance two final projects in a $35-million construction program. This modernization was completed last year with the opening of combined pier 15-17 and San Francisco's new World Trade Center in the Ferry Building.

New Toll Bridge Studied To Parallel Golden Gate

Construction of a high-level toll highway crossing of San Francisco Bay from San Francisco northward to the Tiburon Peninsula in Marin County—a five mile crossing—is entirely feasible, according to an engineering study made by the state Department of Public Works.

It now remains for the state legislature to determine whether it wants to appropriate $500,000 for a comprehensive study on the financial feasibility of the project.

Both a tube and the high-level bridge with suspension spans were given consideration.

The proposed crossing would be one of the longest high-level bridge projects in the world, paralleling the Golden Gate Bridge to the west of the site. The total length, including a short approach in San Francisco and a longer approach in Marin County, would be about nine miles. Towers for the suspension bridges would have a height of 615 ft above water.

The engineering study said that it would be inadvisable to give an estimated project cost without adequate knowledge of foundation conditions and other information affecting costs of the proposed work.

Helping Hand

Scholarships will promote interest in highway field

Evidence of increasing interest in the production of trained highway engineers was indicated on both sides of the U. S.-Canadian border last week.

Four scholarships of $2,000 each have been announced by the Canadian Good Roads Association for postgraduate studies in highways. Canadian engineers wishing to continue studies in highway planning, traffic, soil mechanics and transport economics are eligible to apply at Ottawa headquarters of the association.

The scholarships were donated by Union Tractor Co., Westeel, Ltd., Canadian Salt Co. and Armco Drainage. Two are for study at the Highway Transportation Institute being established at the University of Alberta, the first of its kind in Canada. The third scholarship is for use in Canada or the U. S., while the last one is for study in the U. S. only.

• **U. S. activities**—On the U. S. side of the border, scholastic interest in the highway field is being encouraged in a somewhat similar manner.

An annual award citation to the individual who makes the greatest scientific contribution to highway traffic knowledge is provided under the Theodore M. Matson Memorial Fund recently established at Yale University. The fund also provides for aid on a loan basis to students at the Yale University Bureau of Highway Traffic.

An initial amount presented to Yale last month totaled $4,500. Of that, $2,000 will finance the annual award. The remainder, which may be increased from time to time by contributions, will be used for student aid.

Selected on a national basis, award recipients will receive a plaque and will present a technical paper at a national highway or traffic meeting.

What *GO-power* does for you

Adams heavy-duty graders give you *extra* speed and power . . . with strength, stability, and control . . . "GO-power" to do *every* grader job at the *fastest, most efficient rate.*

Ditch, blade heavy dirt at 3.2 mph

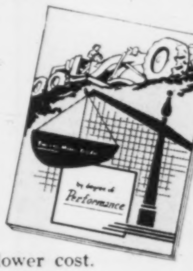
Adams' extra gear ratios let you match power exactly to load on each grading operation. You get 15 speeds — 8 forward, 4 reverse, 3 optional creepers — almost twice as many power-speed combinations as ordinary graders. And Adams' rugged tandem drive . . . full-floating rear axle . . . all-welded one-piece, high-arch, wishbone frame . . . husky front-end . . . welded, short-coupled blade mechanism . . . *all* provide a sturdy structure to make full productive use of Adams great work-power at high working speed.

Watch an Adams operate. Ride it yourself . . . put it to work and see how Adams GO-power gives you accurate grades . . . faster . . . easier. Then you'll understand why owners everywhere say you can do more blade-work, more economically with Adams grader.

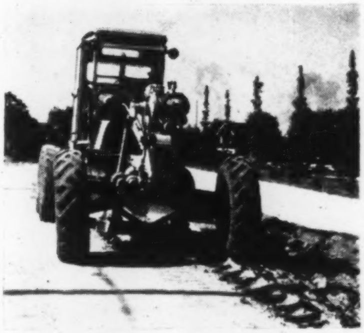
GO-power in every Adams grader

Visit Adams jobs. Talk to Adams operators. You'll find they have a feeling of confidence . . . that they know Adams can go-on-thru when going is tough. They know that their machine — with built-in GO-power — can do what they ask of it. Adams operators know they have the range of speed and power to push bigger, heavier loads . . . the quick, easy control and stability of blade action to cut a little deeper, to work a little faster. With an Adams, your operator will *enjoy* his job because it's easy to do more work . . . better work. He'll be happy, and so will you!

Write for informative booklet "Evaluate Motor Graders" . . . then compare for yourself. There are 5 grader sizes — 60 to 150 hp with conventional transmission, plus the new POWER-*Flow* "660" with torque converter and 190 hp. You can count on every Adams for the GO-power to do more work at lower cost.



Excavate and load up to 700 yd/hr (with Elegrader)



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Spread fill at 6.5 mph

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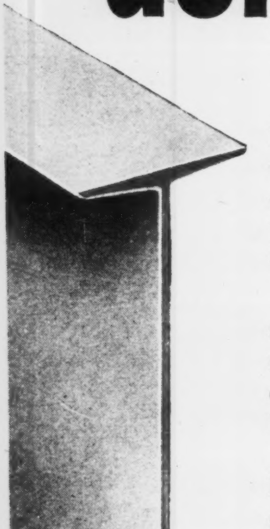
WHERE QUALITY IS A HABIT

7:30 A.M. Nine pockets on four foot centers were provided in each of the 40 foot outside walls to support ends of the nine 24′ eight inch JUNIOR BEAMS weighing 1,400 pounds.

8:00 A.M. Workmen are shown placing the JUNIOR BEAMS in the notched recesses in the eight inch blocks. A concrete block wall through the center of the house foundation provides intermediate support for the JUNIOR BEAMS.

Contractor saves using Junior Beams



This labor saving resulted when JUNIOR BEAMS with 2·4·1 plywood floors were used in place of conventional wood joists by Steinkamp & Company, Inc., Batesville, Indiana, a Lu-Re-Co builder.

The framework of this $9,500 one-story 24′ x 40′ brick veneer house was recently erected in eight hours. Floor construction with steel JUNIOR BEAMS as joists was completed in 19 man-hours as compared to 75 man-hours for conventional wood joist construction.

Material costs were comparable. The 2·4·1 Douglas fir plywood panels serve as subfloor and underlayment for any desired floor covering.

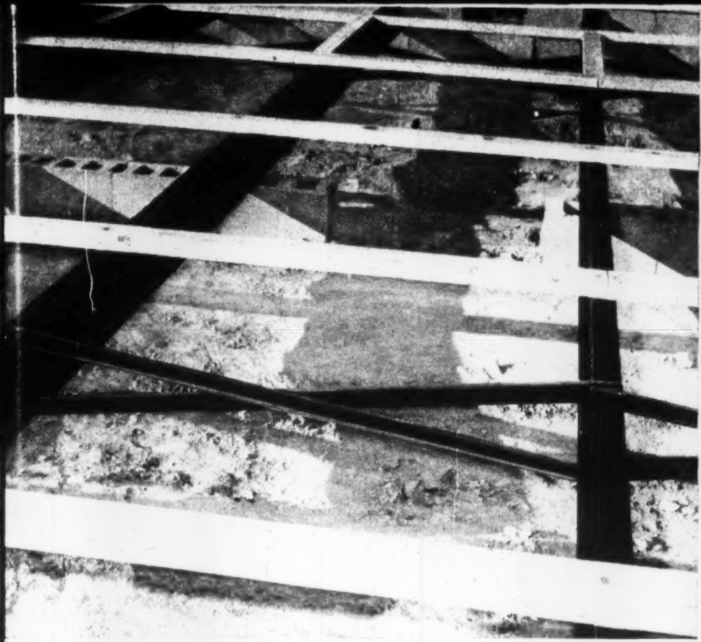
You also can accomplish similar savings with JUNIOR BEAMS, an exclusive development of Jones & Laughlin. They can be used in either crawl space or basement construction.

JUNIOR BEAMS are low in first cost; light in weight for fast, easy steel erection with minimum manpower. Overall building heights can be reduced by proper framing of JUNIOR BEAMS into supporting members.

Call your nearest Jones & Laughlin representative for complete details or write to the Jones & Laughlin Steel Corporation, Dept. 428, 3 Gateway Center, Pittsburgh 30, Pennsylvania.

STEEL

Jones & Laughlin Steel Corporation



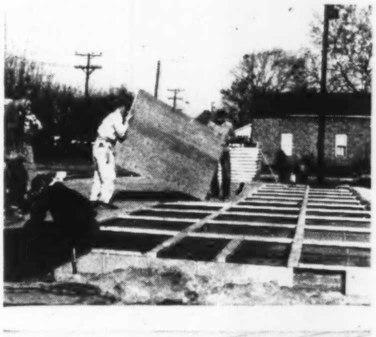
9:00 A.M. Rigid bridging is attached to JUNIOR BEAMS in a continuous row in the center of the 12 foot spans. The 2″ x 4″s, laid flat, are securely fastened on four foot centers transverse to the joists.

9:15 A.M. In turn, 2″ x 4″s are laid along the length of the JUNIOR BEAMS between the transverse 2″ x 4″s, providing a four foot grid. A 2″ x 6″ wood plate is attached to walls to support floor and wall panels.

56 man-hours as floor joists

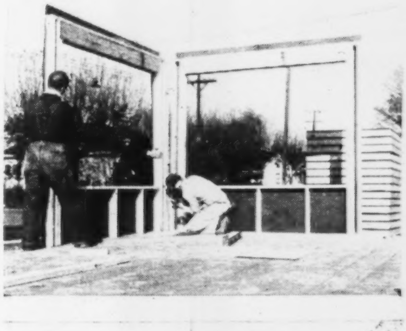
10:15 A.M.

The 4′ x 8′ Douglas fir 1⅛″ plywood panels are nailed in place.



10:45 A.M.

Erection of the prefabricated side wall panels is under way.



1:30 P.M.

Roof trusses are being fastened in place according to schedule.

see our catalog in SWEET'S

3:45 P.M.

Frame of house is completed with laying of roofing paper.

Armstrong's
Temlok
Sheathing
Armstrong
TEMLON
SHEATHING
Armstrong's
Temlok
Sheathing

EXPERIENCE...

assures you of precise and reliable

Detailing
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1907 "Fifty Years of Service" 1957

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HKP CONNORS STEEL DIVISION
H. K. PORTER COMPANY, INC.

New Highway Chief

Charles M. Noble to take over Ohio's top roads post

Charles M. Noble, 60, chief engineer of the New Jersey Turnpike since 1949, has been appointed to the $30,000-a-year Ohio highway directorship. However, to meet requirements of a state law that says that a member of the governor's cabinet must be a state resident for one year, Noble will be employed—at the same salary—as a consulting engineer, taking over the top roads post as soon as the residence requirement is met. In the interim, a deputy director will be appointed.

"Ohio needs modern expressways and multi-lane highways linking our major cities. Noble has the experience and the engineering knowledge to get the job done," said Gov. C. William O'Neill.

Accepting the office, Noble said: "Ohio offers the greatest opportunity in the United States, for highway building".

Noble, a former New Jersey Highway Director, was Chief Engineer of the New Jersey Turnpike Authority from its inception in 1949 until his retirement Jan. 14 this year. Previously, he served as an engineer for the Port of New York Authority while four bridges and the Lincoln Tunnel were being built. He also was an engineer for the Pennsylvania Turnpike Commission, and has had 35 years experience in highway, bridge, harbor and tunnel building in seven states and as a Naval captain at advance bases in the Pacific.

Bertram Tallamy, President Eisenhower's appointee to administer the federal highway program, recommended Noble to O'Neill as "the best highway construction man in the country."

The appointee replaces Samuel Linzell, who recently announced his retirement.

The Ohio governor also announced appointment of Gordon Jeffrey, 53-year-old Lucas County Clerk of Courts, as $18,000-a-year Highway Safety Director, succeeding U. C. Felty.

Oil, Oil, Everywhere

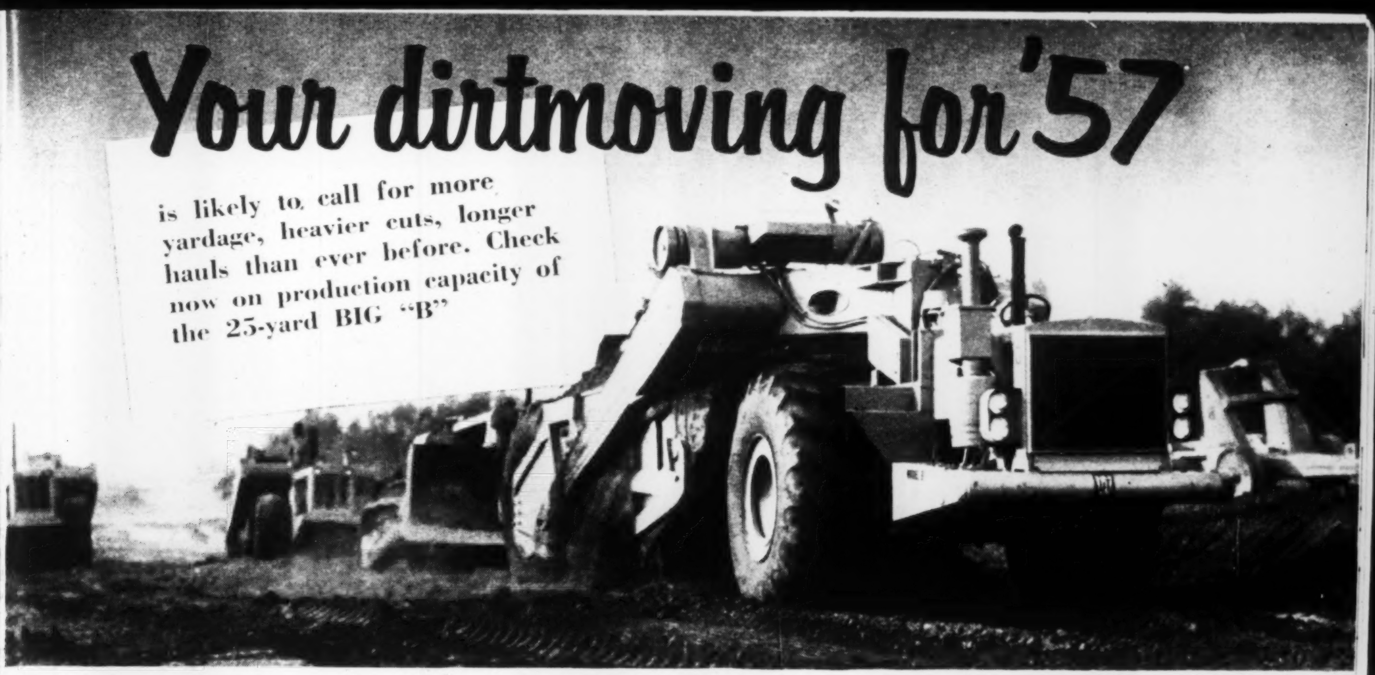
Drillers working for the Ontario Department of Highways in search of a water supply for a new garage on a highway in southwestern Ontario, struck oil instead recently.

The area is near the village of Petrolia, where oil was first discovered in North America, and drills hit the deposit at a depth of 135 ft.

Oddly enough, the area is under lease to a private company for oil exploration and the highway department is still in search of a water supply.

Your dirtmoving for '57

is likely to call for more yardage, heavier cuts, longer hauls than ever before. Check now on production capacity of the 25-yard BIG "B"



B Tournapull's weight-distribution puts 56% of loaded scraper weight on drive wheels ... makes loading easier.

10-gear speed selection

Speeds from 2.4 to 28.4 mph, plus clutch-brake for fast shifting, means more trips per hour. Double-clutching and gear-clash are eliminated Low speed range aids in synchronizing with pusher for fast loading, gives better grade-climbing.

Faster, easier loading

Low push-block has direct-line thrust to blade. Scraper hoist control gives fast pumping in loose materials. Rear deflector-plate heaps loads. Blade angle, weight-distribution, speed loading. Welded box-beam construction takes stresses of fast loading.

Works when other rigs shut down

High percentage of loaded weight on drive-wheels boosts traction. Power-steer through geared kingpin, power-transfer differential, big tires help pull through tough going. Electric controls are weather proof, not affected by rain, dust, cold, heat.

Longer tire life

"B" tires provide ample safety margins. Overinflation is not necessary on "B". Check tire ratings against loaded weight before you buy. Overloaded tires cause overheating and result in excessive wear.

Power where needed

Electrical controls apply power where needed with minimum friction loss. Dashboard push-buttons produce instant action. Maintenance is simple ... no long cables with multiple reverse bends, to wear, no complicated hydraulic system to leak.

Shorter turns

"B" maneuvers in closer quarters than other big scrapers. This big machine turns around in only 35′. Easy power-steer controls this big rig with no effort. Machine turns fast ... maneuvers easily, safely, at high speed, with big loads.

Faster, easier servicing

Accessibility is tops in the "B". All components are easy to get at and service. You don't need to take whole machine apart to remove working parts. Fewer fittings and check points reduce lubrication time.

Safe, easy operation

Fingertip electric controls let operator work faster, with less fatigue. Good visibility, ease of operation, low center of gravity, big disc-type brakes make Tournapull exceptionally safe to operate. More than 4 times braking surface per-ton-of-weight than others in its size class. Good "B" operators are easy to get and keep.

Interchangeable equipment

Same "B" prime-mover pulls interchangeable 35-ton rear-dump. You get double value by keeping your 2-wheel tractor hauling either shovel rock or scraper dirt. Bodies use same wheels, tires, brakes, and electric controls. Change takes only few hours.

Investigate the BIG "B" now and place orders early if you want bigger production in your '57 work schedule.

Wide and high apron-opening, plus positive-ejection tailgate, gets big 25-yard loads out fast.

Tournapull—Trademark Reg. U.S. Pat. Off. BP-958-G-b

LeTourneau-WESTINGHOUSE Company, PEORIA, ILLINOIS

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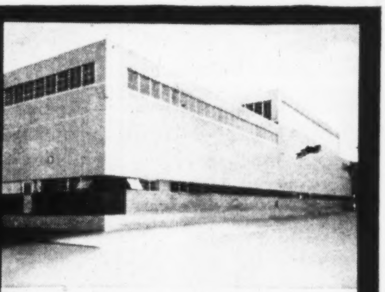
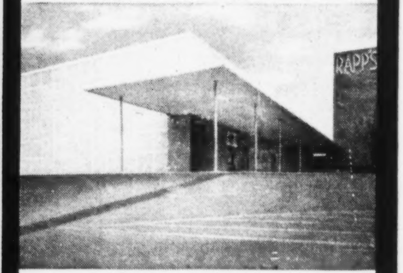
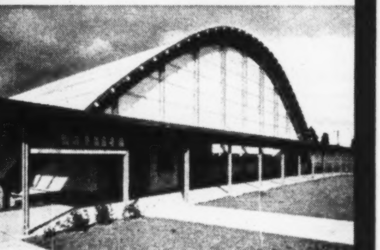
Economical!
CEMESTO PANELS*
REG. U. S. PAT. OFF.


for INDUSTRIAL BUILDINGS



for COMMERCIAL BUILDINGS


for SCHOOL BUILDINGS

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QUICKLY-ERECTED CURTAIN WALLS FOR ALL TYPES OF BUILDINGS

Do 3 Jobs in 1! Cemesto Panels provide a *structural wall* ... thermal *insulation* ... maintenance-free incombustible *finished surfaces* inside and out. Save on heating and air conditioning costs. They blend harmoniously with brick, stone, wood, glass, and metals. May be worked with ordinary tools on the job, or pre-cut to required special sizes at the mill for faster application. Panels fasten to steel framing with metal accessories, or to wood framing with nails or screws.

Attractive Extruded Aluminum Accessories harmonize with gray Cemesto Panel surfaces to lend beauty to curtain walls. Built-in Neoprene gaskets assure weather tightness.

Architects specify this remarkable all-purpose building material for *curtain walls, roof decks,* and *movable interior partitions.* Write today for New File 5500 . . . 52-page simplified data book on design and application details of Cemesto Structural Insulating Panels. The Celotex Corporation, Dept. ENR-17, 120 S. LaSalle St., Chicago 3, Ill.

***Cemesto Panels** are strong, rigid, permanent structural insulating units. Their core is Celotex cane fiber insulation board effectively protected against dry rot and termite attack by the exclusive Ferox* Process. Non-combustible cement-asbestos facings are bonded to both sides of this insulating core by a moisture-proof adhesive. Cemesto Panels resist fire, weather, and wear, need no painting or maintenance.

Another Famous CELOTEX *Product*

CEMESTO
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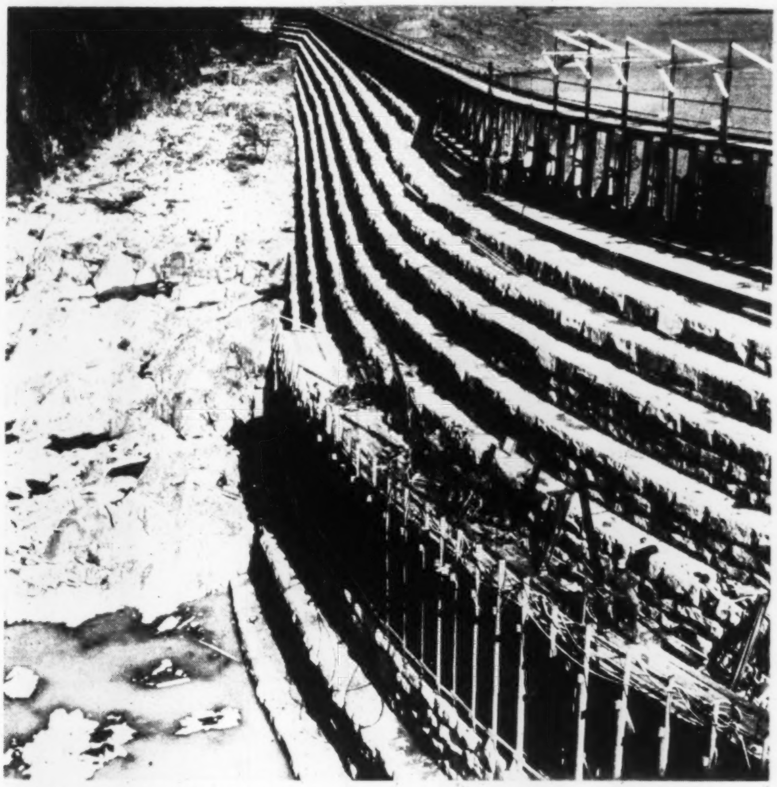
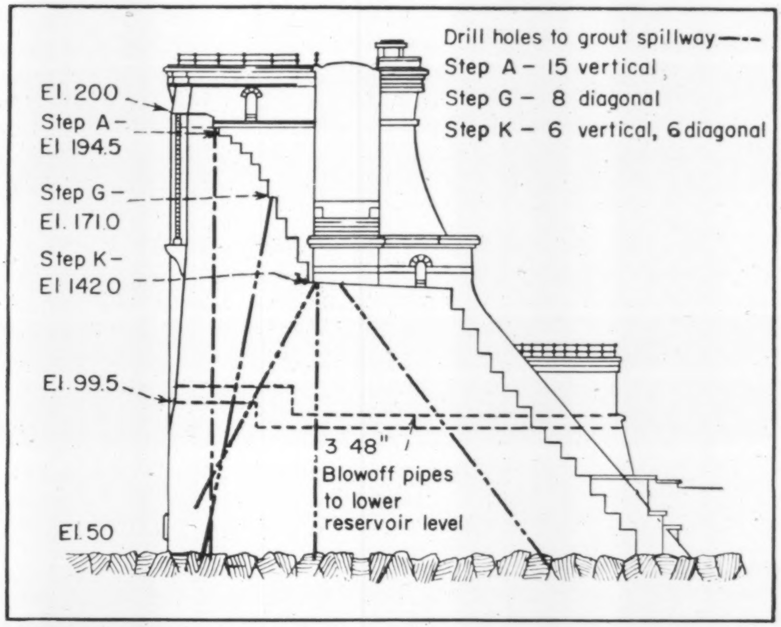
STRUCTURAL INSULATING PANELS

THE CELOTEX CORPORATION • 120 S. LASALLE STREET • CHICAGO 3, ILLINOIS

Grout Makes Damaged Spillway Sound



STEPPED SPILLWAY of New York City's New Croton Dam holds drill rigs for grout treatment to repair damage resulting from heavy storm.



GROUT HOLES, 35 in all, pierce the heart of damaged spillway, and go down into bedrock in most instances. Grouting then proceeded in stages of 20-ft lifts.

Fifty-year-old New Croton Dam is whole again. Drilling, grouting and caulking have restored the integrity of the stepped spillway of this first high gravity masonry dam built in the U.S.

Sometimes referred to as Cornell Dam, its name when first built, New Croton was completed in 1907 for New York City's water supply system. Shortly after completion, vertical cracks in the main dam, the result of temperature stresses, had to be caulked with lead wool (no expansion joints had been provided). But no further trouble was encountered until the recent cracking and seam-opening of the dam's adjoining spillway.

• **The October storm**—During a storm in October, 1955, 10.3 in. of rain fell on the Croton watershed over three days. It hit the Croton chain of reservoirs when they were virtually at capacity—only 1 billion gal were needed to fill. Total runoff from the storm was around 48 billion gal.

Elevation of the spillway crest, including 2-ft-high wooden flashboards, was 202. On the last day of the storm, Croton Lake had reached El 205.84. The head on the spillway was 3.84 ft, with a rate of discharge over the crest of 14.8 bgd. It was the greatest flow the structure had ever experienced, and it continued for 4 hours.

Apprehensive over the unprecedented level of the lake, the New York City Department of Water Supply, Gas & Electricity—headed by Commissioner Arthur C. Ford—made a review and analysis of the data that had governed design of New Croton Dam.

• **New Croton Dam**—They found that the dam had been designed for a flood flow of 8 bgd and a maximum lake level at El 206. No uplift or ice pressure had been considered. This was not oversight on the part of the designers; it was simply the first such dam built, and pertinent precedence data were scarce.

Spillway and main dam had been made a continuous structure, with the spillway at right angles to the main dam and connected by a circular curve 250 ft long. The spillway was carried up to El 200 except for a 250-ft-long depressed section adjoining the dam proper. That was finished off at El 196. However, a reinforced concrete wall later raised this section also to El 200. The ultimate crest—El 202—was reached by 2-ft-high wooden flashboards set in two rows separated by 8 in. of riprap.

The spillway is founded on gneiss. Rubble masonry forms the lower structure—a dark granite, "gabro" rock, being used in blocks of 1 to 3 cu yd. Above, the center of the spillway is of rubble masonry for the major part and cyclopean masonry toward the end.

The upstream side of the spillway is faced with cut stone to a depth of at least 28 in., in courses rising from 20 to 30 in. Joints do not exceed ½ in. for 4 in. from the face and not more than 2 in. wide for the remaining depth.

The downstream face is made up of steps of block-stone masonry, which rise a uniform 2 ft, each step bonding under the one above. Stones run 2 ft thick and 3 ft deep with joints no wider than ½ in. For the upper steps, coping is granite stone with exposed faces rough-pointed.

A platform breaks the continuity of the steps at El 140.

• Drawing down the lake—With design head (lake El 206) almost reached during the storm, the aging structure was being subjected to some heavy forces. The first precaution was to remove the wooden flashboards. This was done in January and February, 1956, when the lake fell below El 202.

With the flashboards removed, water went over the spillway at a rate of 28 bgd—twice the rate during the storm and 3½ times that for which the structure was designed.

Croton Lake wasted through the spring of 1956, finally stopped in June.

The downstream face being once again exposed, vertical cracks in several stones forming the steps were seen. From these cracks and separated mortar joints, water leaked through at the rate of 1.5 to 2 mgd. So, in August, the lake was drawn down—through three 48-in. blowoff pipes at El 99.5—to check for damage on the upstream face of the spillway.

• The damage—As the lake level dropped, cracks in the cut-stone masonry came into view. For the most part the cracks were along the mortar joints. There were also some diagonal splits in the stone itself. Several cracks matched the locations and axes of those in the downstream face, indicating complete rupture in the masonry. At El 140, the platform elevation, a displacement of about ⅝ in. had occurred at an extensive horizontal crack.

The survey of the damage was made by Commissioner Ford, Chief Engineer Edward J. Clark and other engineers of the water department. Conferences to find the best method of repairing the damage were held with Commissioner Irving V. A. Huie and Chief Engineer Stanley Dore of the New York Board of Water Supply.

Also, Malcolm Pirnie Engineers, New York consulting firm, was engaged, and in turn engaged Karl Kennison as special consultant on the project.

• The remedies—Decision was made to caulk the upstream face with lead wool. (Similar caulking of the cracks in the main dam, done in 1908, was found to be in near-perfect condition.) Then, through holes to be drilled through to bedrock, the plan was to force grout into the core of the structure in the damaged section. Also, it was decided to remove the reinforced concrete wall in the depressed part of the spillway, thus lowering the flowline for a length of 200 ft.

Caulking and removal of the concrete wall started as the lake was being drawn down. Spearin, Preston & Burrows, Inc., of New York, was given the contract for this work, and caulked approximately 1,000 lin ft of joints and cracks with 5,000 lb of lead wool. Average depth of caulk was 3½ in.

At every 10 ft of the caulk, ¼-in. copper tubing vents were inserted. These provided openings through which grout could later extrude, as evidence that there were no air pockets left in the structure.

While caulking was going on, core borings were started from the top step of the spillway (Step A, El 194.5). Sprague & Henwood, Inc., got the first contract, with later emergency contracts going to W. A. Thalman and Warren George, all New York boring specialists.

The core borings were fifteen 1⅞-in. dia vertical holes spaced 15 to 20 ft apart. Holes ranged from 40 to 164 ft deep, averaged 127 ft, and extended 15 to 25 ft into bedrock. Wash water used during the drilling carried tailings out through the seams and helped reveal the course of some of the faults or cracks.

From Step G (at El 171) 8 diagonal holes were drilled, inclined 13 to 40 deg. From Step K (the platform at El 140) 6 vertical and 6 diagonal holes were also drilled through to bedrock.

Although the core borings helped in indicating fault areas, more information was obtained from tests with water under pressure and dye than from examination of the cores. Lines plotted on a drilling chart showed depth in each hole at which water loss occurred, and determined locations of the seams.

Grouting started on October 11. The operation was organized and directed by James Cooper, civil engineer with the Board of Water Supply.

Grout pipes, 1 in. in diameter, were used. These had expansive rubber plugs to prevent the grout from rising above the level at which it was being placed in a "stage" operation. All holes were grouted to the same level before the plugs were raised to the next higher level in increments of 20 ft. Because of the step construction of the spillway, grout pressures were carefully adjusted: sufficient to make grout flow through the faces of the structure, but not great enough to cause uplift of the stones. Pressure was decreased 0.7 psi for every foot rise, with the top step grout going in under 7 to 10 psi.

Grout injections totaled 129, using 787 bags of high early strength cement. Mixture was 10 gal of water per bag at the outset, thickening to 6 gal per bag.

When the grout vented through the

Old Croton Dam

OLD CROTON DAM . . . Contemporary print shows dam 114 years ago. Recent photograph, showing spillway at work following Croton Reservoir drawdown, marks very little difference. The only big change is the steel bridge, put up in 1904 to replace the old crossing below the spillway. Normal reservoir waterline is visible on bridge abutment.

▶

HIGHBRIDGE . . . of Old Croton Aqueduct, 120 ft in the air, still carries some water across the Harlem River. A steel arch replaces the old river piers to help navigation. Seven railroad tracks and 18 highway lanes, including Major Deegan Expressway, run under Highbridge.

▶

DOWN QUARRY ROAD . . . to the Hudson River, through one of many openings under the old aqueduct. Once a path for carts carrying marble blocks, this tunnel today is part of somebody's backyard.

▶

It Was Built

When New York City's Croton reservoir was drawn down for repairs on New Croton Dam, Old Croton Dam, a landmark of the past, rose to view.

The 114-year-old rock structure, submerged for half a century, was in perfect condition—masonry and timber sound, gate valves operable. So much so, that it was put into service during the drawdown to control the flow of water into Old Croton Aqueduct, to cracks on the downstream face and through the copper tubing vents in the upstream face, burlap was caulked into the cracks, and the tubes were pinched off. Because of the high water-cement ratio of the grout, high shrinkage occurred. However, it was figured that grouting at the next higher level filled both the new voids and those of the previous level, which had had time for partial set and shrinkage.

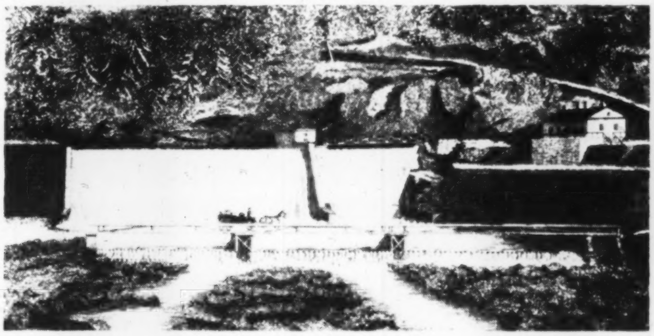
With only two instances of grout venting from adjacent grout holes in the closely spaced pattern, it was reasoned that there were relatively few cracks inside the structure parallel to the length of the spillway.

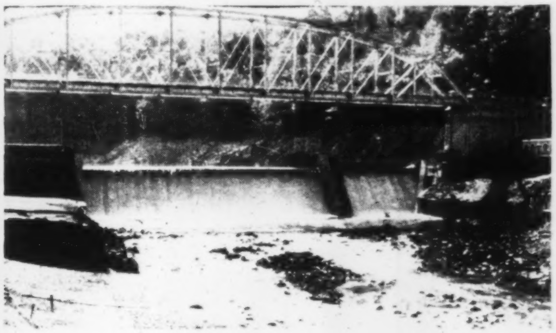
Grouting completed, the blowoff pipes for discharge through the structure were closed at the end of October, and storage in Croton Lake began.

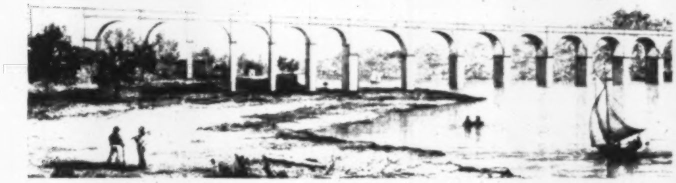
• **A watertight job**—To test the job, two core holes were drilled from the top step and subjected to water and dye tests. No leaks occurred. The operation, apparently, had restored the original structural integrity of the spillway.

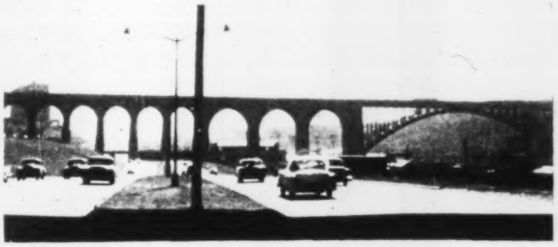
A final decision made is to lower the entire spillway to El 196. This will be done some time in the future by contract following bidding. The grouting, plus the lowered hydrostatic force against the dam and spillway, is expected to keep New Croton trouble-free for many years to come.

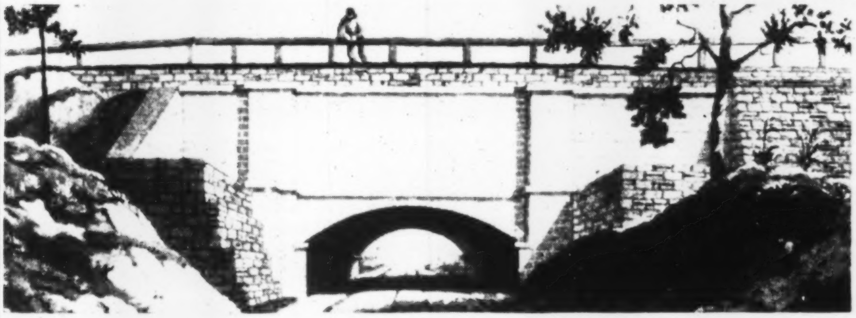
and Aqueduct after 114 years . . .









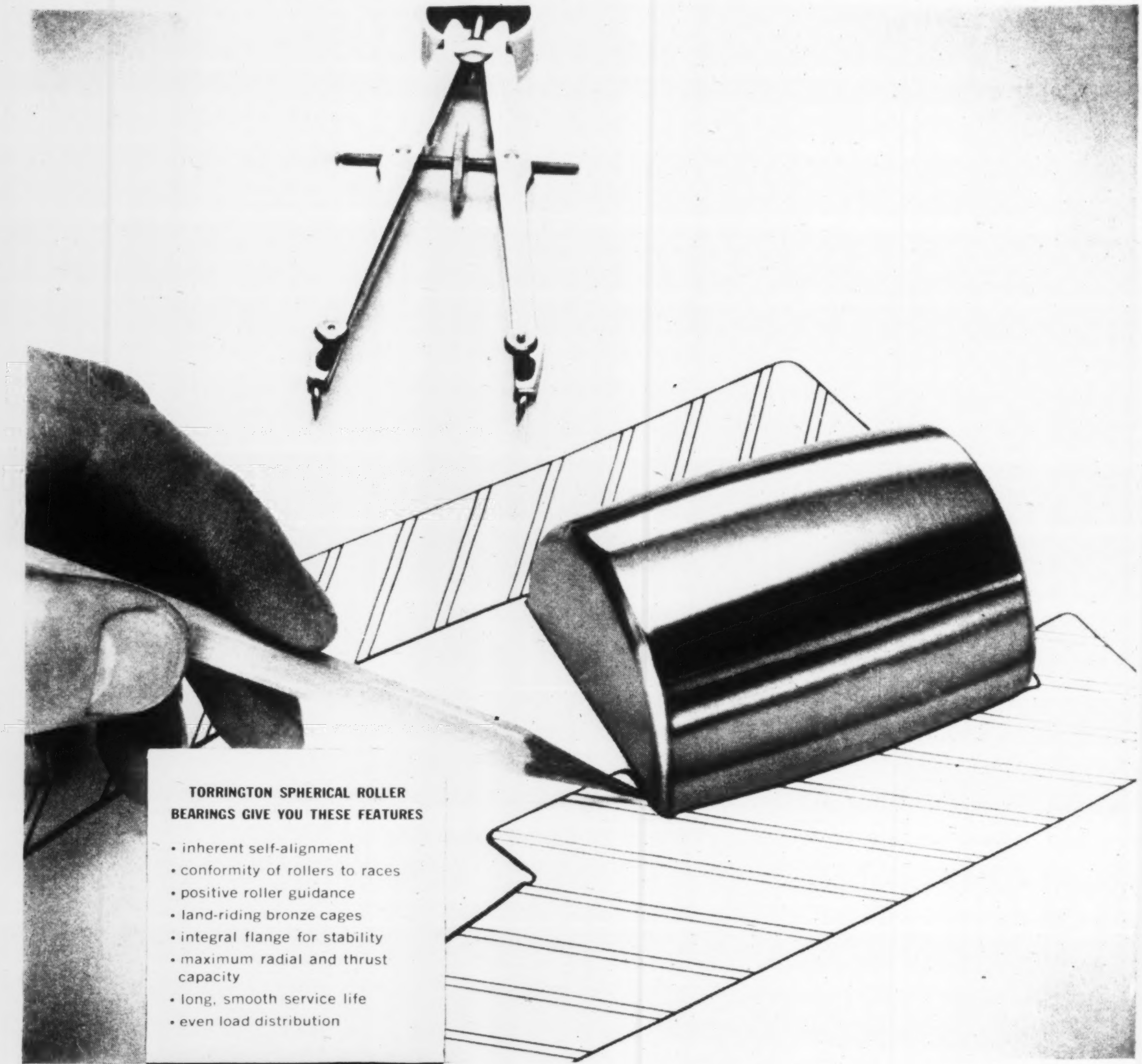


to Last—and Did

help avert a water shortage for a number of Westchester communities (ENR Sep. 27, p. 22).

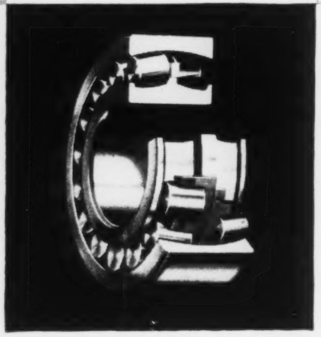
As the reservoir filled, Old Croton Dam disappeared once more—leaving only the imposing masonry bridges, tunnels and embankments of its old aqueduct to mark one of America's earliest hydraulic engineering achievements. And the 38-mi-long aqueduct—superceded by newer and vaster water resources for New York City—remains important to only three upstate villages, and Sing Sing Prison.

On these pages, today and yesteryear comparisons of parts of the old system show amazingly little change in the structures—a tribute to the permanence of the engineers' and builders' work. Lincoln Diamant of the Westchester Historical Society assembled the historical comparison, drawing on collections of old prints and recent photographs of the unchanged landmark.



TORRINGTON SPHERICAL ROLLER BEARINGS GIVE YOU THESE FEATURES

- inherent self-alignment
- conformity of rollers to races
- positive roller guidance
- land-riding bronze cages
- integral flange for stability
- maximum radial and thrust capacity
- long, smooth service life
- even load distribution



Mated perfectly - for life!

Make a point to notice the roller end and center guide flange in a Torrington Spherical Roller Bearing. The perfect mating there means a smoother, longer bearing life.

Roller end and flange surfaces alike are ground to a common spherical radius centered on the common vertex of bearing axis and roller axis. Under all load conditions, the rollers bear lightly but constantly against this flange. This guides the roller positively with minimum friction and prevents skewing. Stress concentrations leading to early failure are avoided, so the bearing will serve you many good turns longer.

This is the kind of feature Torrington builds into its bearings out of its experience with all major types serving in all kinds of equipment. Care for such details is matched only by our care in mating the *right* bearing to the *right* job. In this, your Torrington representative is an expert: call on him when you need help. *The Torrington Company*, South Bend 21, Ind.—Torrington, Conn.

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District Offices and Distributors in Principal Cities of United States and Canada

SPHERICAL ROLLER • TAPERED ROLLER • CYLINDRICAL ROLLER • NEEDLE • BALL • NEEDLE ROLLERS • THRUST

RUBBER TIRED ROLLER finishes newly resurfaced road. Pavement will be usable as soon as equipment moves out.

Do-it-yourself produces . . .

Quick, Cheap Asphalt Surface Treatment

Combining ingenuity, experience and job-made equipment, the Connecticut State Highway Department has announced development of a new pre-mix asphalt surface treatment for roads that cures almost immediately upon application.

Designated as MC-5, the mix has been the subject of widespread experimental use over the last three years, and now is entered in the state's specification directories.

Coupled with the application methods developed, the material can be used to apply a new surface ranging in depth from paper-thin to 6 in. with one pass of the equipment.

According to Newman E. Argraves, Connecticut's state highway commissioner, advantages of the method are:

- It can be used as a temporary remedy on worn-out concrete pavement until the pavement can be resurfaced with bituminous concrete.
- It can be used in lieu of tar and sand treatments in business sections of towns and villages, eliminating complaints resulting from tracking of tar into stores and homes.
- It can be used to correct slick pavement conditions on bleeding penetration or stone surface roads, minimizing accident conditions.
- It can be used for sealing and renewing pavement surfaces where it is desired not to add to the thickness of the pavement.
- It can be used for sealing and correcting uneven conditions on old sheet asphalt pavements.

According to Howard E. Dickinson, maintenance coordinator for the department, who is given major credit for development and application, the mix cures immediately, and thus is not affected by adverse weather conditions. It can be placed in any air temperature, with road conditions presenting the only bar to application.

Further claims made for the method are the elimination of annual oiling and sanding of roads on which the treatment is applied; the provision of a skid-resistant surface; elimination of the need for detouring traffic, since the material will accept traffic immediately after application. In addition, dips and sags in the road can be filled to provide a smooth ride.

• Formula—According to Dickinson, the job mix formula and general composition of the mixture is as follows:

	Job Mix Formula Per Cent	*General Composition Limits Per Cent*
Passing #200 Sieve	5.2	3 — 8
Passing 80 Sieve	14.2	8 — 20
Passing 40 Sieve	32.6	20 — 40
Passing 20 Sieve	55.2	40 — 60
Passing 10 Sieve	78.8	65 — 85
Passing 4 Sieve	89.0	85 —100
Passing 3/8 in. Sieve	90.3	100
Bitumen	7.5	7.0 — 8.0

Weight of aggregate and bitumen used in one ton of mixture:

Sand (passing 1/4-in. sieve)	1,400 lb
Stone 1/4-in. size (retained on 1/8-in sieve)	450 lb
MC-5	150 lb

The material should be placed at a temperature of approximately 300 deg F, with suitable limits ranging between 275 and 325 deg.

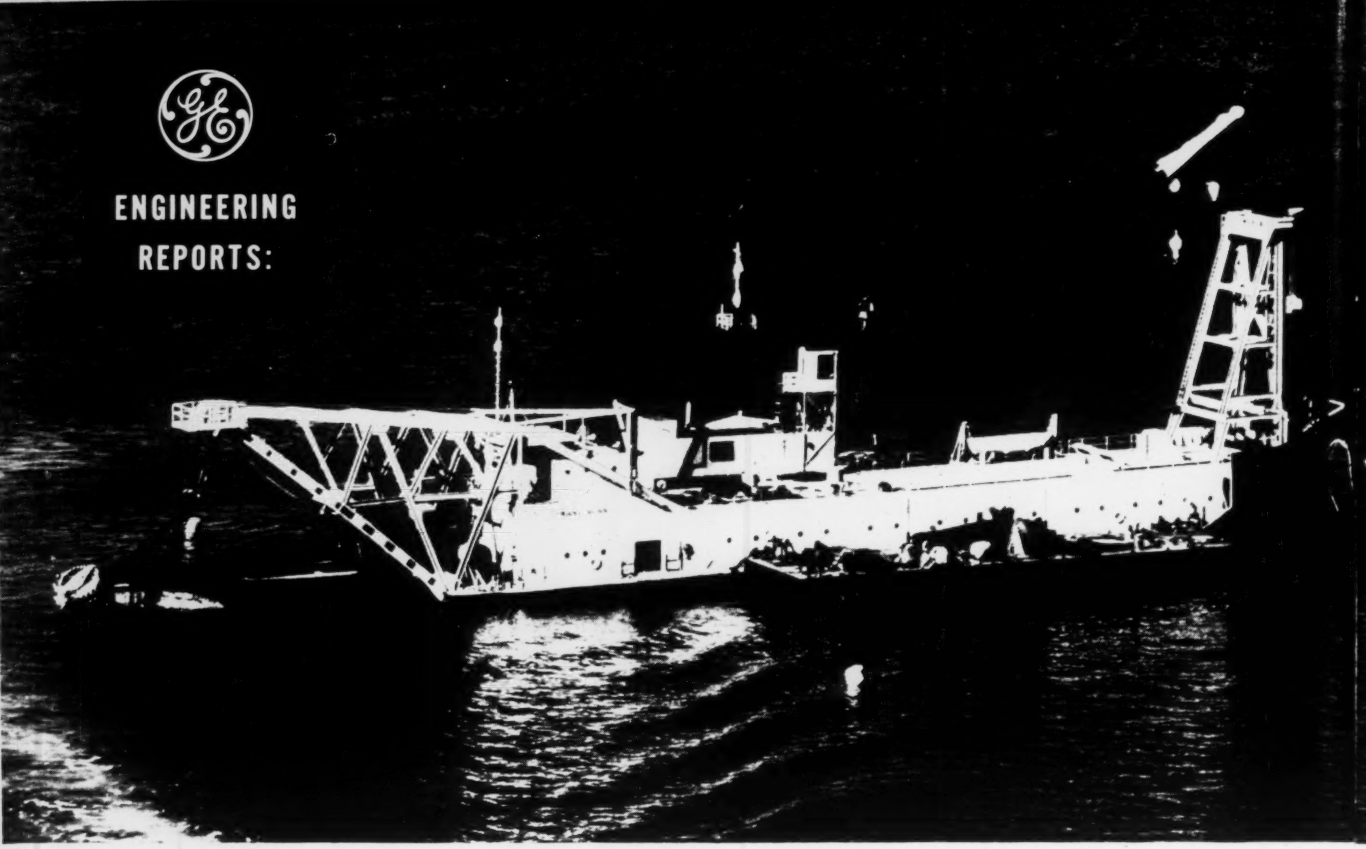
• Home-made equipment—An interesting aspect of the use of the mix is the equipment for its application. Required are a hopper spreader, a truck for light dusting with sand, a rubber-tired roller and material trucks to haul to the hopper spreader.

One added piece of equipment is a 9x12-ft rug, which is dragged behind the hopper truck to remove wheel tracks and prevent fluffing. Canvas also may be used, but it must be weighted to serve the purpose.

Manpower, in addition to drivers, includes a foreman, two men at the hopper and two men at the drag-rug to prevent side slip.

The 11-ft.-wide hopper, with its bottom permanently fixed 3 in. above the road, is built of sheet steel, mounted between two 6-in. channel irons, each 20 ft long. A 2-in. cold-rolled steel bar, spotwelded to each channel iron,

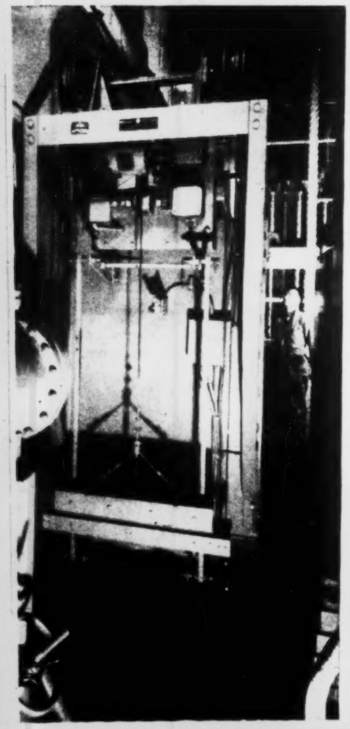
ENGINEERING
REPORTS:


ONE OF WORLD'S LARGEST, dredge sucks sand from Bay bottom, pumps it 8,700 feet to shore through 30-in. pipeline.

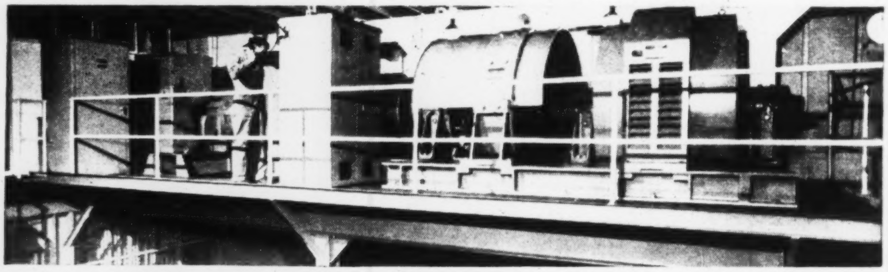
POWERED BY GENERAL ELECTRIC SYSTEM . . .

Utah Construction's giant new dredge helps

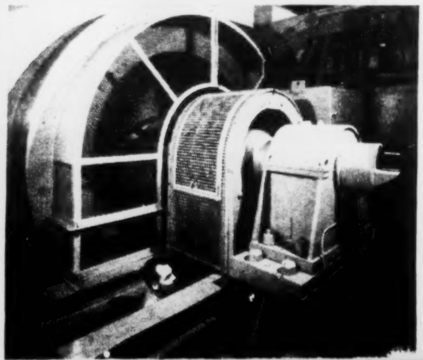
SPEED CONTROL of 8000-hp pump-drive motor is accomplished with liquid rheostat.



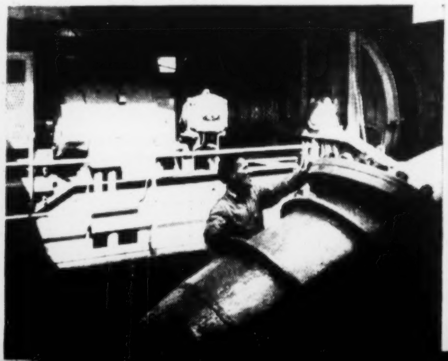
MOTOR-GENERATOR SET provides reliable, efficient power for d-c drives. Unit includes 2250-hp motor and 1250, 200, 100-kw d-c generators which are platform-mounted to save limited floor space. All components are accessible for inspection and routine maintenance.

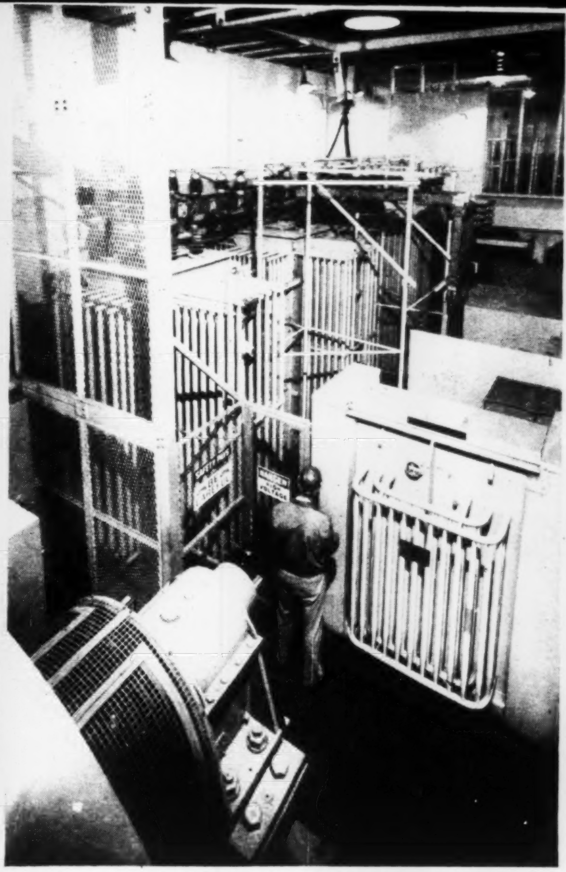


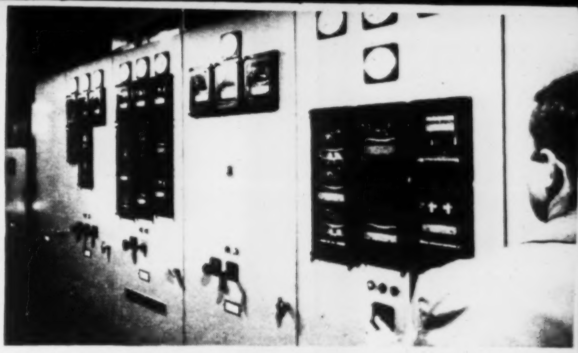
SUCTION-PUMP DRIVE is sturdy, General Electric induction motor, specially designed to withstand the stresses of pumping operation.



WINCH AND HOIST DRIVES are sturdy Type-CD, direct-current motors built to give reliable service during overloads on application.







PROTECTION, SWITCHING of main power circuits is performed by metal-clad switchgear with Magne-blast circuit breakers. Packaged units help save space in dredge.

DREDGE POWER is reliably provided by three 3333-kva transformers, supplied 12-kv power from shore. RM* units come completely assembled and equipped to cut installation time, costs.

LOW-VOLTAGE POWER, CONTROL comes from transformer supplying 480 277-v power and motor control center offering space-saving control of auxiliaries.

add 390 acres of new land to Alameda, Calif.

Built by Yuba Mfg. Co., "Franciscan" pumps over 1,000,000 cu. yds. of sand per month to turn tidelands into housing sites

Across the Bay from San Francisco, the land area of Alameda is currently being enlarged by eight percent. To do this, Utah Construction Co. is using one of the world's largest pipeline dredges to suck sand from the bottom of the Bay and deposit it ashore where new acreage is being formed for a housing project.

ENGINEERING ASSISTANCE and major equipment for the electrical system of the $2.5 million dredge were supplied by General Electric. G-E application engineers worked closely with engineers of both the contractors and the dredge builder, Yuba Manufacturing Co.

Taking a "system" approach, General Electric engineers helped select the right drive equipment for the various dredging functions, then assisted in making sure the power distribution and control equipment was integrated with these drives. Other G-E engineers were on hand to help facilitate installation and start-up of the electric equipment.

Thus, years of General Electric experience in equipment design and application for dredges and other construction tools helped the customer attain highest reliability and longest life on tough, round-the-clock dredging operations.

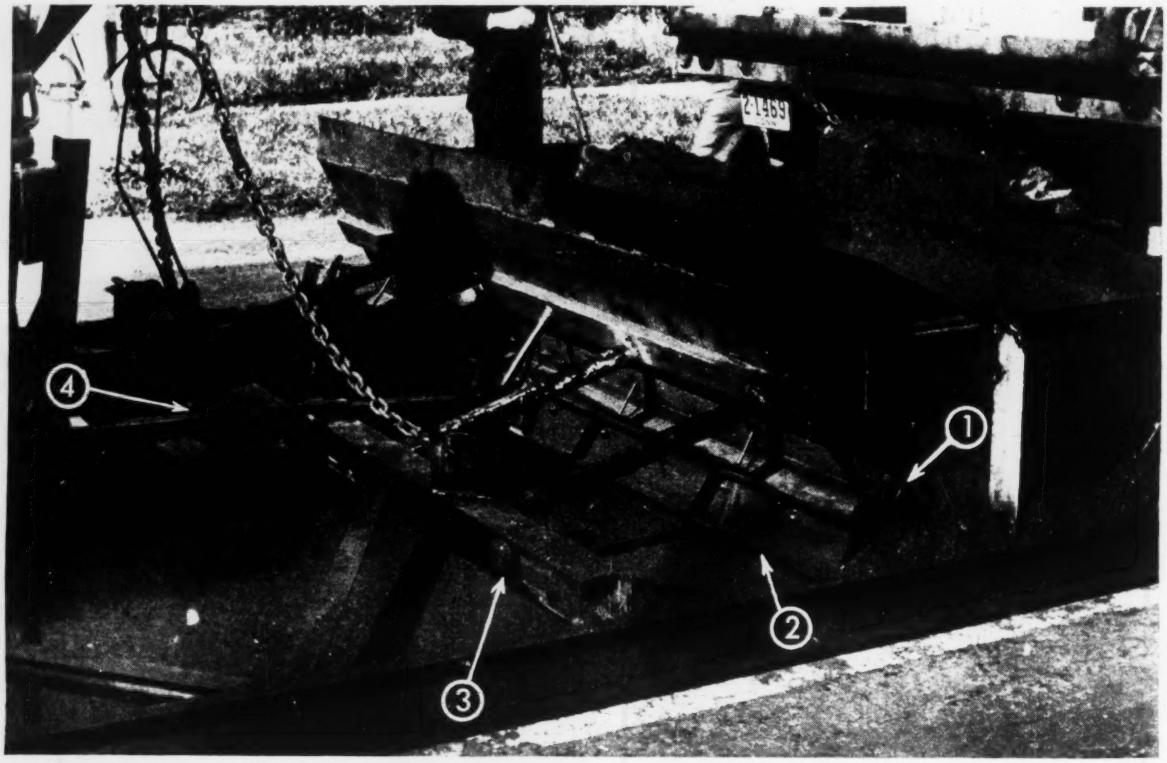
ELECTRIFICATION OF CONSTRUCTION TOOLS with G-E engineering and equipment can pay off for you too. Whether it be application of electric power to conventional tools or development of new powered equipment, your General Electric Apparatus Sales Office can help you. Contact him early in your planning. General Electric Co., Schenectady 5, N. Y. 664-43

*Repetitive Manufacture.

Engineered Electrical Systems for Heavy Construction Tools

GENERAL ELECTRIC

. . . Fast Curing Asphalt is Inexpensive



JOB-MADE, but effective is hopper unit for use with Connecticut's new road mix: (1) bolt for adjusting height of blade; (2) spreader blade; (3) push bar for attachment to truck; (4) push arm from truck, adjustable to hold constant level.

serves as skid or runner surface for the channel iron, and another angle between the longitudinal irons serves as a push bar. This push bar is connected directly to the underframe of the carrying truck. Braces extend from it to the hopper and diagonally from the channel iron to the push bar to provide extra strength and rigidity for the entire unit. The whole unit can be raised and lowered by a standard snowplow hoist on the truck.

The leveling, or cutting edge, that squeezes the mixture into place on the road is a snowplow blade welded to another channel iron. This blade is fixed at a 15-deg angle from the road, with the cutting edge leaning toward the truck and the top toward the hopper. The height of the blade is adjustable to establish the desired level on the road's surface.

• Operation—As the mixed material is fed from the hopper to the road, it is distributed automatically in correct depth by the blade, filling deep depressions or barely covering high spots. The operation proceeds at a speed equal to a fast walk, with stops required only for reloading of the hopper by the dump trucks.

According to Commissioner Argraves, it is possible to finish resurfacing an 11-ft-wide strip of road for a distance of two miles in 4 to $4\frac{1}{2}$ hours.

Following immediately behind the hopper truck and its dragging rug is a sand truck to dust the new surface. After the sand truck comes a rubber-tired roller to compress the material. The road is then considered immediately available for traffic.

• Advantages—Although the mixture crusts and cures almost immediately, it retains its live quality. Material placed as long as three years ago, when picked out from under the top crust, is still gummy and adhesive.

Argraves said that this active quality is retained under apparently any traffic conditions: the sample described was taken from a stretch of road near Hartford that is on a direct truck and car route between New York City and Boston. However, despite the "aliveness" of the material, there is no creeping or shoving even in the sections around traffic signals where short stops and starts are common.

The highway department, Argraves said, now is using the method on shoulders for portland cement concrete pavements with considerable success, eliminating the need for annual oiling and sanding of the surfaces. For this shoulder operation, a 4-ft-wide hopper is used in place of the larger model.

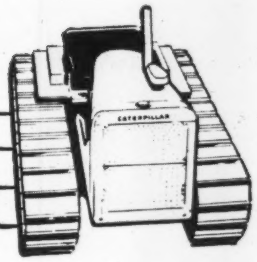
Engineers cautioned, however, that the mix is not designed as a permanent replacement for bituminous concrete.

Along with Dickinson, Tomasso, Inc., of New Britain, Conn., and Walter Schuler, assistant chief engineer for the highway department, worked on the method and material.

FINAL DRESSING-TRUCK does light sand dusting; men prevent sideslip of anti-fluff rug.

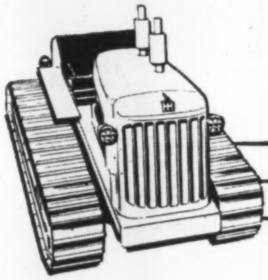
Compare speeds, and what they mean to profit...

CAT - D8



SPEEDS IN MPH

FORWARD	REVERSE
0 to 3.6 Low	0 to 3.6 Low
0 to 7.4 High	0 to 7.4 High

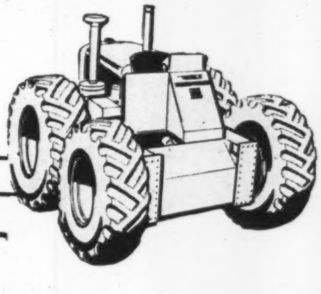


IH - TD24

SPEEDS IN MPH

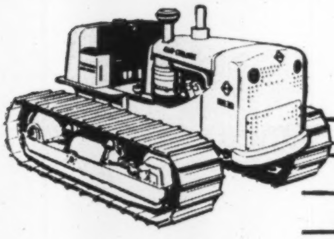
FORWARD	REVERSE
0 to 7.6	0 to 6.6

LeT-WEST C



SPEEDS IN MPH

FORWARD	REVERSE
0 to 17.4	0 to 7.3



AC - HD21

SPEEDS IN MPH

FORWARD	REVERSE
0 to 3.0 Low	0 to 5.5
0 to 7.5 High	

All above tractors equipped with torque converter. Figures taken from manufacturers' specification sheets available to us at time of printing.

Tournatractor—Trademark Reg. U.S. Pat. Off. CT-1144-G-b

Few heavy-duty tractors have kept pace with today's trend to high speed. Hauling units, scraper-combinations, loaders, shovels, cranes, and other types of earthmoving equipment are now available on rubber for greater speed; yet most of the big tractors still roll on speed-limiting steel tracks. Habit, plus the large number of crawler-tractors still in use, make it easy to overlook the possibilities of profit and time advantage available through use of the speed dimension. For instance, on an ordinary dozing cycle, if speed can cut your back-up time in half, you can increase the number of cycles on this saving alone by 15% per hour! Since costs remain constant, this increase in production is almost entirely profit. There is another point on speed that may be of interest. As crawler speeds are increased, and as the high gear-ranges are more extensively used, you add materially to the track-wear and expense.

The farther the travel distance, the more closely you should look into the advantages of rubber in the *speed* dimension to increase your profits. Call us anytime. We'll be glad to demonstrate a new model Tournatractor on your job, and let you compare its performance with any equipment you now own.

Work	Operation	Time (minutes)		
		Average Crawler	Rubber-Tired Tractor	Speed Saved in Min.
Dozing	Pushing load . . 150 ft.	0.86	0.57	
	Return . . . . 150 ft.	0.36	0.21	
	Gear changes	0.30	0.10	
	TOTAL	1.52	0.88	0.64
Pulling 15-yd. Scraper	Loading	0.75	1.25	
	Hauling . . . . . 1000 ft.	2.10	0.76	
	Spreading	0.40	0.40	
	Return . . . . . . 1000 ft.	2.10	0.63	
	Gear changes	0.30	0.10	
	TOTAL	5.65	3.14	2.51
Push-loading	Loading	0.85	1.10	
	Return	0.42	0.21	
	Gear changes	0.30	0.10	
	TOTAL	1.57	1.41	0.16
Pulling 20,000# Roller	600-ft. cycle travel . .	3.40	2.72	
	turns	0.30	0.30	
	TOTAL	3.70	3.02	0.68

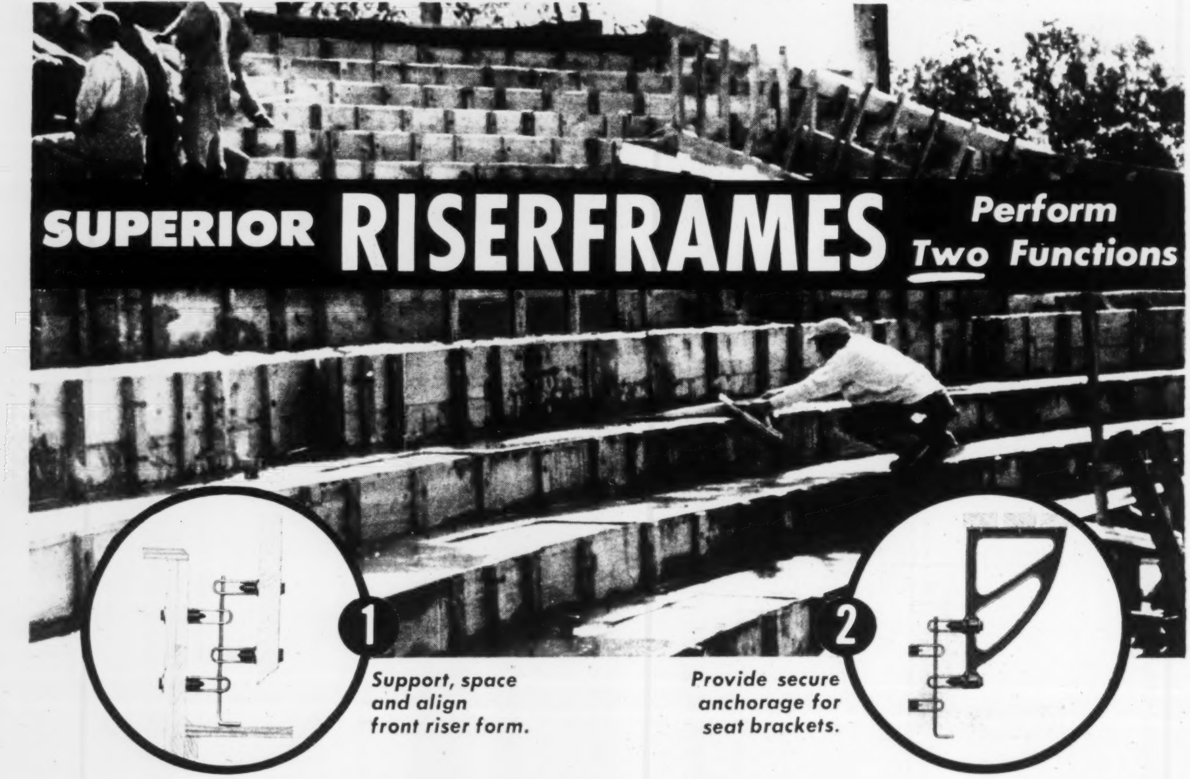
Figures computed from manufacturers' specification sheets available to us at time of printing.

LeTourneau-WESTINGHOUSE Company, PEORIA, ILLINOIS

A Subsidiary of Westinghouse Air Brake Company

WHERE QUALITY IS A HABIT

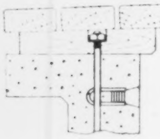
Building a Grandstand, Stadium, Balcony?



SUPERIOR RISERFRAMES *Perform Two Functions*

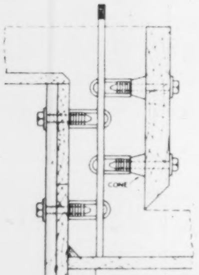
1 *Support, space and align front riser form.*

2 *Provide secure anchorage for seat brackets.*

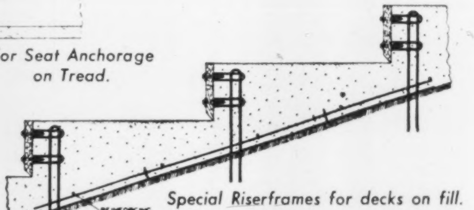


The advantages of Superior Riserframes have been demonstrated and proved in the construction of hundreds of grandstands, stadiums, and balconies of auditoriums and theatres.

The front riser form is accurately supported, spaced and aligned by the Riserframe to which it is secured by temporary coil bolts. After stripping, seat brackets are easily attached with permanent ½″ coil bolts which engage the coil sockets embedded in the concrete. For seat anchorage on treads, Riserframes with ½″ diameter cold rolled rods, threaded at one end, are used for the vertical connection as shown in drawing at left. A nut secures the metal bracket or wooden seat bolster. For decks on fill there are special Riserframe units as shown below.



For Seat Anchorage on Tread.



Special Riserframes for decks on fill. Units may contain 2, 3, or 4 supports.

On your next job . . . use Superior Riserframes. There is a type of Riserframe for any possible job requirement. A preliminary layout and estimate will be prepared from your plans without charge or obligation. For additional details request a copy of our complete 60-page catalog.

SUPERIOR CONCRETE ACCESSORIES, INC.

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(A Suburb of Chicago)

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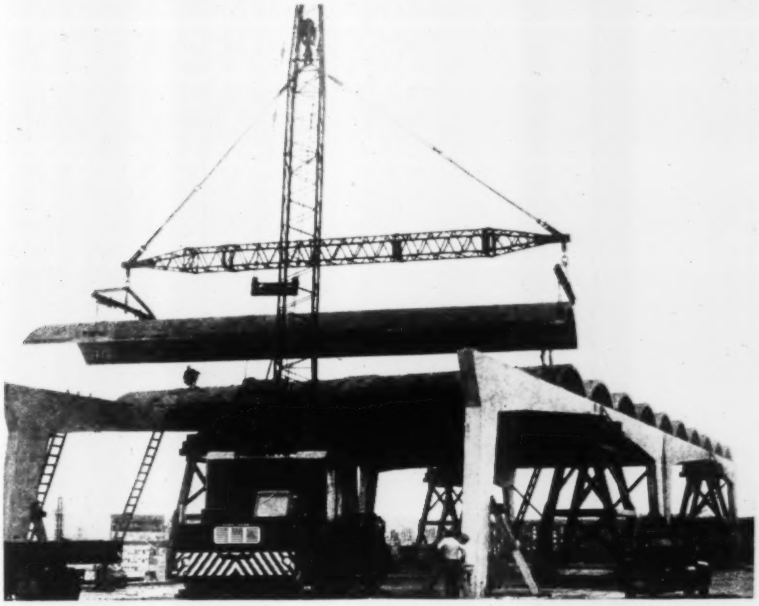
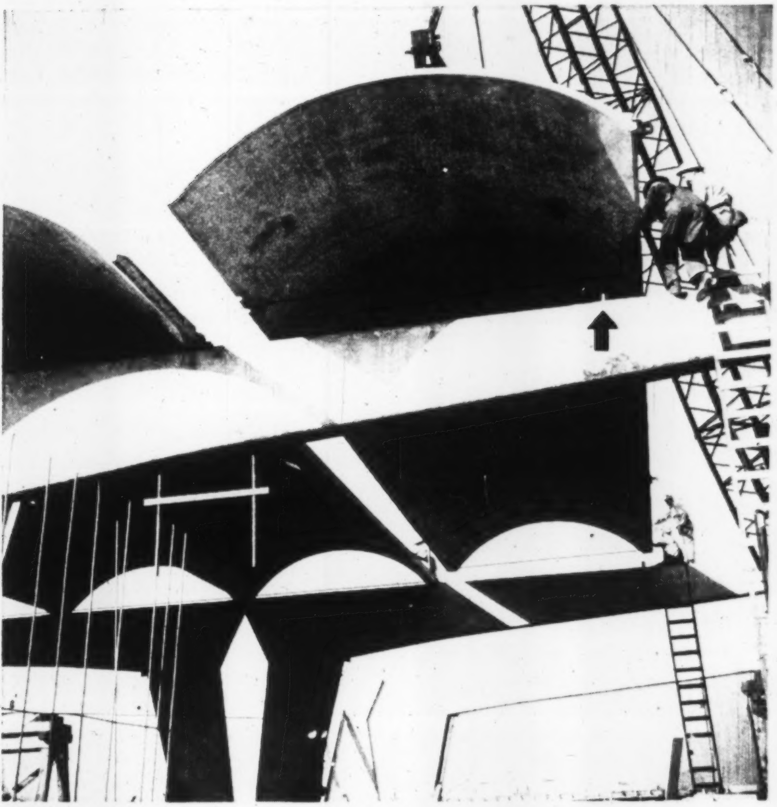


PRECAST BARREL ARCH SECTIONS form the roof of a California high school gymnasium. A 50-ton truck crane (right) erected the 20-ton units, which are probably the biggest thin-shell arches ever precast.

Precast Arches Form Gym Roof



CONCRETE ARCHES are supported by precast bents. Pipe sections (arrow) cast into the bents fit into sleeves in the barrels; a welded connection completes the anchorage.

What may be the biggest thin-shell-concrete barrel arches ever precast were hoisted into place recently in California to form the roof for a high school gymnasium. The units, weighing 20 tons each, are 3½ in. thick, 61 ft long and 15 ft wide with a 3½-ft rise. The 61-ft length includes a 9-ft cantilever overhang, and a 52-ft span between precast, three-hinged supporting bents. Each bent spans 90 ft.

The building in question is part of the new Westmoor High School of the Jefferson High School District located in Daly City, just south of San Francisco city limits. The 104-ft width of the 180-ft-long structure is split into two bays to form separate gyms for boys' and girls' physical education classes.

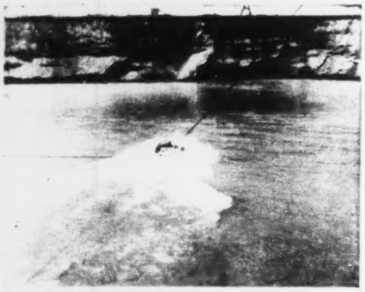
Also included in the project is a shop building roofed with smaller barrel arches. This building is 50x136 ft in plan and includes barrels that are 58 ft long and 15 ft wide.

Concept of the structure was developed by its designers in recent years to compete with structural steel for warehouse spans of 50 ft. But the Westmoor High School project is the first actual use of the design.

To use concrete economically for spans of more than, say, 40 ft, some form of space frame is required, the designers claim. But forming a concrete space frame 22 ft above floor level is prohibitively expensive (cost of forms would exceed cost of all other items—concrete,

Sauerman Scraper
Eliminates a Shift

• Digs 250 Tons Per Hr.



• 400 Ft. From Hopper, 30 Ft. Below Water

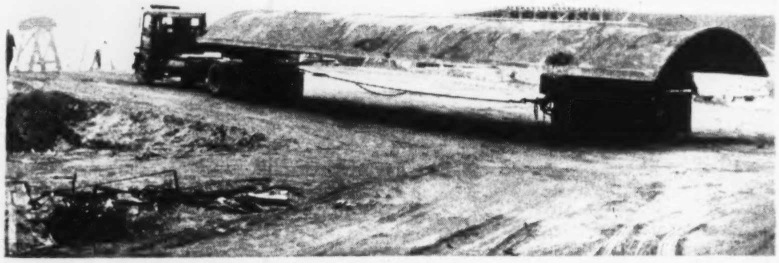
A 4-yd. Sauerman scraper machine gives Union Sand & Gravel Co. the production necessary to supply increased plant needs in just one shift. Two were required for their former installation, where a 2½-yd. scraper and smaller hoist were used.

The scraper is powered by a Sauerman three-drum air controlled hoist. The third drum is used to shift the tail block and trolley traveling on the rapid shifting bridle cable. This cable spans 200 ft. between tail towers. The tail trolley provides a method of laterally shifting the Crescent Scraper. When the material is depleted, one or both of the towers are moved to a new location.

Sauerman can help you cut costs

Write us about your materials handling job. Chances are you can use the low cost Sauerman Method. Request Sauerman News No. 144 for more details on the Union installation, also Catalog A for specifications and plenty of on-the-job photos.

SAUERMAN BROS., Inc. 632 SO. 28th AVE. BELLWOOD, ILLINOIS



THE HEAVY CONCRETE UNITS were hauled from the storage area by truck and dolly with the concrete piece connecting the two sets of wheels.

reinforcing, etc.). Thus, precasting became an economic necessity.

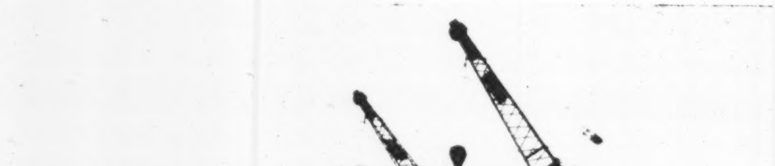
• Low-cost roof—The designers believe that real economy results; they estimate the in-place cost of the barrel vaults of either gym or shop building at $1.37 per sq ft and of the 90-ft span gym bents at $0.81 per sq ft. Thus, in the case of the gym, a 90x50-ft column spacing has a structural frame cost of $2.18 per square foot. (The entire project averages out at about $13 per square foot.)

The designers are convinced that this precast structure will set a precedent for future precast operations. In fact, they have under consideration similar structures with even longer spans.

• Bents take roof loads—The supporting bents are arranged in three pairs, one pair on each side of the building and one pair down the middle. Each 90-ft bent is cast in two parts and each part weighs 24 tons. The bents are 16 in. thick. Width is 2½ ft at the base, 5 ft at the haunch, and 1¾ ft at the center pin connection. Cast into each half piece is a steel plate with one plate having a steel-pipe pin.

For erection purposes the bents were temporarily supported by heavy timber falsework towers at the center of the 90-ft spans. These towers were left in place until the full roof load was applied. Top of the bents is 22 ft above finish floor level.

For erection purposes, the barrel arches have ¾-in. round reinforcing rods cast into them just above each support as tension ties to prevent spreading of the barrels. After the units were all in place the rods were cut out, allowing the barrels to spread by their own weight butting against each other and forming a continuous diaphragm roof. Welded plates then tie adjacent arches to each other to make the roof diaphragm effective for earthquake resistance.



CASTING BED for the precast pieces accommodated 6 barrels. Units were removed from forms about 8 days after casting.

At each support, each arch is blocked out to fit a pipe cast into the bent. After all barrels were in place and before the tie rods were cut out, a connection was welded to the top of the pipe to anchor the barrels to the bents. Heavier pipe anchorage used at the end arches takes the side pressure of these barrels. There are two rows of 12 arches each on the gym roof.

A major point of difference from normal precast barrel arches is that there is no stiffening beam at the supports. Instead, almost imperceptible V-shaped shallow stiffening arches (3 in. extra thickness) are cast into the barrels over the support points.

The barrels are made of 3,000-psi lightweight concrete (102 pcf). Except for the underpart of the cantilever overhang, bottom of the barrels was cast on corrugated steel. Since the underside of the arches will not be lined, this is intended to provide better acoustical qualities. Reinforcing in each barrel arch is nominal—about what you would expect in thin concrete roof or floor slabs.

• Fast erection—The contractor set up a casting line with six sets of forms and cast six arches (5,500 sq ft) in less than four hours. The big concrete units were left on the forms for some eight days before removal to a storage area.

No camber was provided for the 52-ft span. Deflection at midpoint is only about ½ in.; from the gym floor that isn't noticeable.

The valley between two barrels automatically forms a gutter for drainage purposes. A sloping thin layer of lightweight concrete is placed in the gutter to make runoff from rainfall drain more rapidly.

Before the barrels were placed, electrical conduits were attached to the top of the arches. After all in-place connections were made standard asphaltic roofing material was applied. Thus, the conduits were covered and the arches waterproofed.

Erection of the barrels was handled by a 50-ton capacity truck crane—the most powerful such unit on wheels. The arches were mounted on a truck and trailer at the storage site for hauling the 400 yd to the building site. Including this hauling time, each barrel was set in place in about one hour.

Westmoor High School was designed by Mario Ciampi, architect, and Isadore Thompson, structural engineer, both of San Francisco. General contractor holding a $2.5-million contract for the entire 1,300-pupil high school is Theo. G. Meyer & Sons of San Francisco. Erection contractor on the work was Kelley Bros. of San Jose, who called in Bigge Crane & Rigging Co. of Oakland to handle the barrel-arch erection.

WAREHOUSE
CRANE CO.
VALVES

"These new Crane AWWA Valves mean less work for me"

Everywhere these new Crane AWWA Valves have been installed, maintenance costs have dropped. Here are some reasons why:

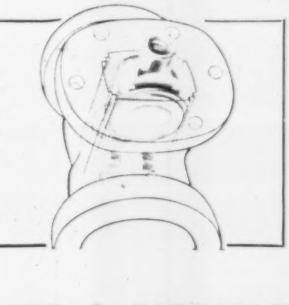
The design of the Crane 4-piece disc assembly and guide ribs permits the trunnion-mounted twin discs to rotate freely as they are raised or lowered. Concentrated wear on both seats and discs is prevented. The simplified wedging action assures positive seating . . . tight closing. And the guide ribs prevent the disc assembly from jamming or disengaging.

Crane AWWA Valves meet all AWWA specifications. You also get the Crane 2-piece gland and gland flange with ball-type bearing. Prevents binding on stem under uneven pull-up on gland bolts.

You can order Crane AWWA Valves with hub, flanged or mechanical joint ends—in sizes 2" to 12". For complete specifications, contact your local Crane Representative, or write to the address below.

View of disc assembly showing its simplicity. Assembly is suspended from stem, which engages upper spreader. Discs are suspended from upper spreader on trunnions. Disc flange guides hold assembly between guide ribs.

These valves available with hub, flanged, or mechanical joint ends.



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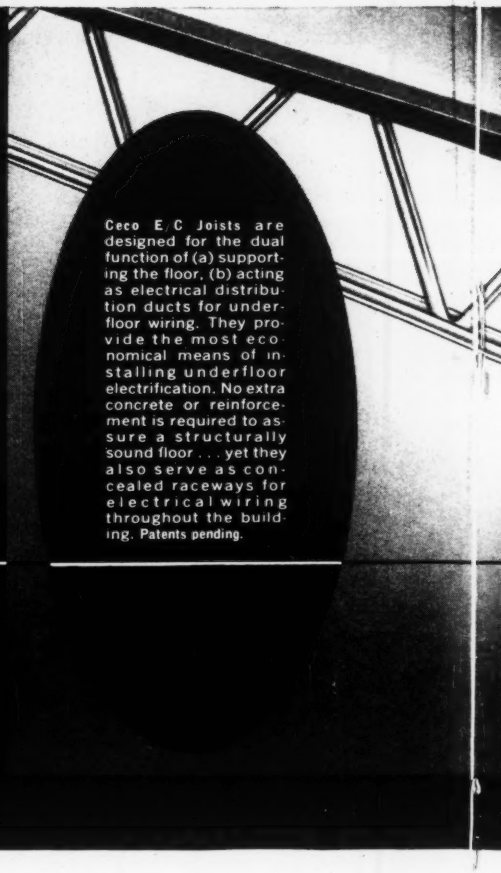
SOMETHING NEW UNDER THE FLOOR...

ELECTRICAL FLEXIBILITY... WITHIN A BUILDING BUDGET

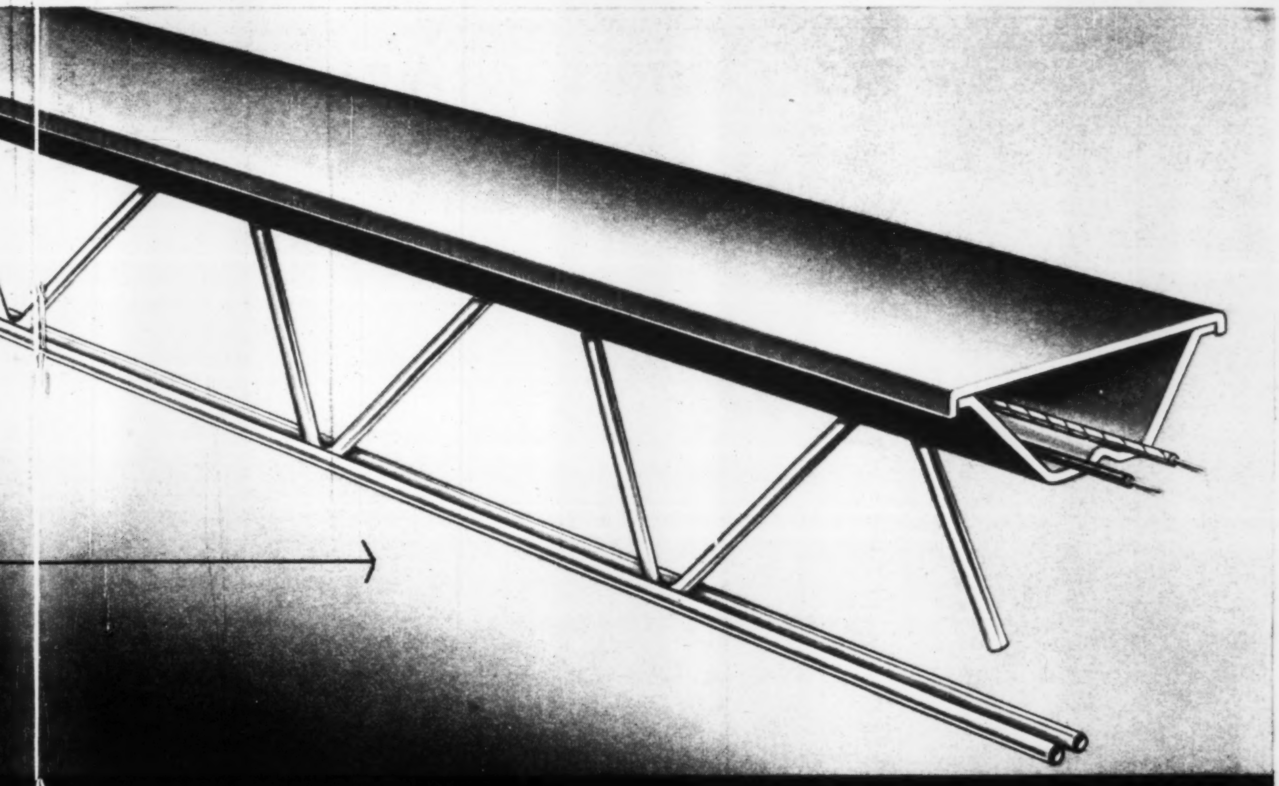


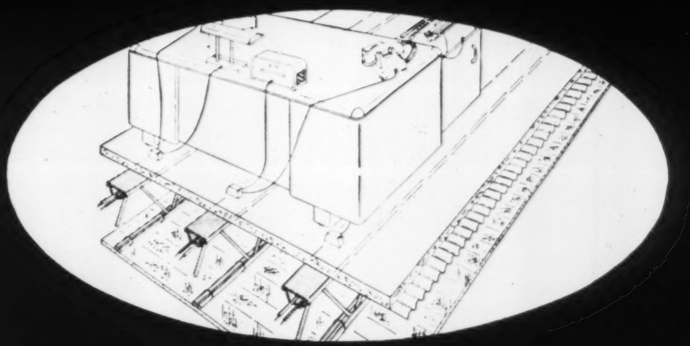
Ceco E/C Joists are designed for the dual function of (a) supporting the floor, (b) acting as electrical distribution ducts for underfloor wiring. They provide the most economical means of installing underfloor electrification. No extra concrete or reinforcement is required to assure a structurally sound floor . . . yet they also serve as concealed raceways for electrical wiring throughout the building. Patents pending.

New exclusive CECO Electro-Channel Steel Joist Construction for Underfloor Electrical Systems

Saves Time . . . Saves Weight . . . Costs Less, Too

Building planners recognize the basic fact that in this "electrical age" buildings must be wired for the *future*. To provide only for today's requirements is not enough. Use of electrically-operated business machines and communication equipment is constantly increasing. But the question is: How to provide for future electrical flexibility at *lowest cost?* Ceco meets the issue with its new Electro-Channel Open Web Steel Joists. Now, for the first time, steel joist construction can provide an integral underfloor raceway system allowing complete electrical flexibility. These joists have the same structural properties as regular Ceco Shortspan Open-Web Steel Joists. But in the Electro-Channel Joists the conventional top chord is replaced by a specially shaped hollow section which serves both as the top chord of the joist and as an underfloor distribution duct for electrical circuits. For complete information on Ceco Electro-Channel Steel Joist Construction, consult your nearest Ceco office. *Approved by the Underwriters' Laboratories for use with electrical header ducts and accessories as manufactured by General Electric, National Electric Products Corporation and Walker Bros.*





Wiring can be brought up through the floor at any point along the joists

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"CREATIVE ENGINEERING" BY CECO—with a variety of building methods and products to meet any design problem. See CECO in the early planning stage for Steel or Concrete Joist Floor Systems—the most economical Underfloor Electrification—the widest line of Steel and Aluminum Windows and Curtainwalls. All will help you accomplish your design objectives. And CECO products and services assure quality construction on a tight budget.

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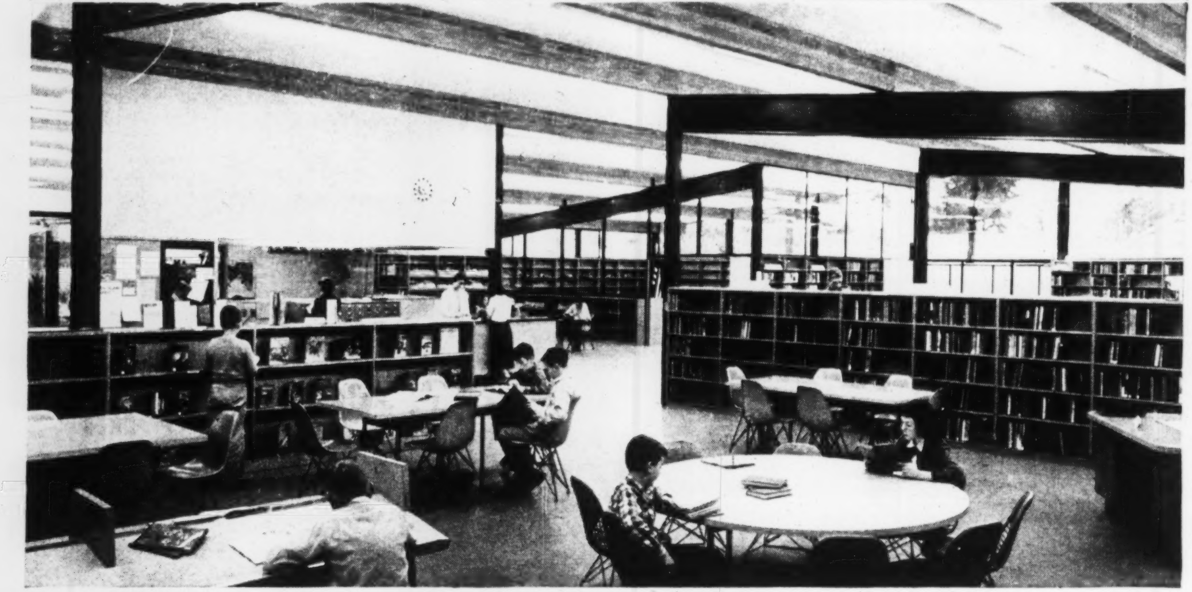
ON THE NEWS FRONT WITH STRUCTURAL STEEL



Seattle Public Library

This new Northeast Branch of Seattle's public library is a good example of exposed structural steel design. One of 15 branch libraries in Seattle, the building has won two architectural awards for beauty and utility. The steel beams, supplied by Bethlehem, span one-half of the library's width from outside to center, allowing large areas of interior space, uncluttered by an excess of supporting columns. Large areas of glass give library maximum daylight. *Architect:* Paul Thiry; *General Contractor:* The Lewis Construction Company, both of Seattle.

Oregon Department Store

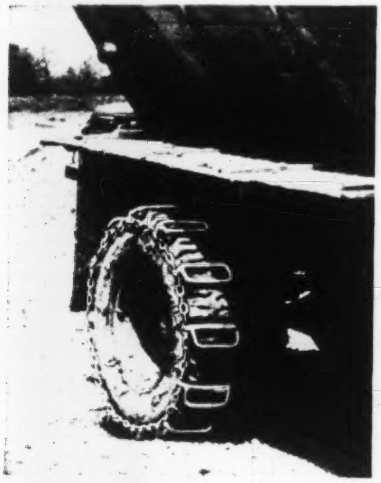
The first floor of Meier & Frank's new department store in Salem, Oregon, contains the largest expanse of merchandise on one level in the Pacific Northwest. With four levels—a lower level, first floor, mezzanine and second floor—the new store was built on a framework of Bethlehem Structural Shapes. An adjacent 1000-car parking garage lets shoppers step right out of their cars and walk directly into the store. *Architect:* Welton Becket and Associates, Los Angeles; *Associate Architect:* James L. Payne, Salem; *Steel Fabricator:* Stevens Equipment Co., Salem; *Contractors:* Hoffman Construction Co., Portland, and Viesko & Post, Salem.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.
On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation
Export Distributor: Bethlehem Steel Export Corporation

BETHLEHEM STEEL

BETHLEHEM STEEL

New Products



Tractor Traction Device Available for Truck Tires

Snap-Trac, a patented traction device used on farm tractors, now is available in truck tire sizes.

Consisting of high-tensile steel scoop sections tightly chained together with case-hardened links, the device is claimed to provide twice the traction of new tires.

Under heavy load in soft soil, the scoop sections dig in and open wide. As they leave the ground the sections snap back against the tire, cleaning themselves. Snap-Trac, Inc., Middlefield, Ohio.

Asbestos-Cement Sewer Pipe For Building Connections

Asbestos-cement sewer pipe for building connections has been added to the Keasbey & Mattison line of asbestos products. Most extensive use of the pipe is expected in short length house-to-street sewer hook-ups.

The pipe is available in 4- and 6-in. diameters and is produced in 13-ft and 6½-ft sections. A coupling type joint is utilized; one workman can handle a 13-ft section. Keasbey & Mattison Co., Ambler, Pa.

Clay Research Foundation Develops Thin Facing Brick

The Structural Clay Products Research Foundation has developed a clay masonry vener. Known as SCR re-nu-veneer, it is attached to exterior or interior walls by means of a special metal clip nailed to the existing wood wall. The unit is a ¾-in.-thick slab of hard-burned Norman-size brick. An L-shaped corner unit allows cornering with the same appearance as a conventional brick wall. Structural Clay Products Institute, 1520 18th St. N.W., Washington, D. C.

Pigskin Leather Floor Tiles Cost No More Than Carpeting

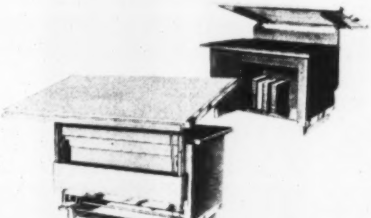
Pigskin leather now is available in tile form, under the name Pigs-kin, for covering floors, walls and ceilings. The product compares in cost, manufacturer says, to medium-priced carpeting.

The tiles are impregnated at the factory with a finish treatment said to make them highly resistant to abrasion, heat, acid, alcohol and stains.

Applied with an adhesive supplied by the maker, the tiles are laid directly on concrete, plaster, wallboard, plywood and other surfaces. Hardwood flooring, however, should be felted first.

Natural tan is the standard color, but other colors are supplied on special order. Standard sizes are 4½x4½ in. and 4½x9 in. The tiles are made in two thicknesses, 1/16 in. and 3/32 in., and also come with straight or beveled edges.

For irregular fitting, the tiles can be cut with scissors. They also can be bent to fit rounded surfaces. Kieffer Tanneries, 240 Front Ave. S.W., Grand Rapids 4, Mich.



Drafting-Reference Unit Will Save Floor Space

Known as the Stacor-Matic, a combination drafting table and reference desk eliminates the need for a draftsman to leave his seat for reference purposes. Set up in a row, the units provide compact "offices," serving the man in front with reference facilities and the man behind as a drafting table.

The reference section, surfaced with desk-top linoleum over reinforced steel, provides ample drawer and file space. The drafting table has wide-range height and slope adjustments. The units have island bases equipped with leveling devices. Stacor Equipment Co., 768 E. New York Ave., Brooklyn 3, N. Y.

(*New Products continued on page 52*)

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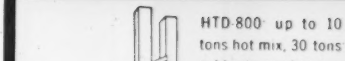

HTD-800: up to 10 tons hot mix, 30 tons cold mix per hour.

HTD-500: up to 7 tons hot mix, 15 tons cold mix per hour.

HTD-B: up to 5 tons hot mix, 10 tons cold mix per hour.

HTD-B TRUCK MOUNT: up to 5 tons hot mix, 10 tons cold mix per hour.

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SONOVOIDS®
save material and reduce weight
of concrete slabs!

Construction of floor slab. Boulder Life Ins. Co. Bldg., Boulder, Colo. Jack Cys, Denver Col., contractor.

SONOVOID® SONOCO
FIBRE TUBES
for voids in concrete construction

Save concrete and reinforcing steel . . . use low-cost SONOVOID Fibre Tubes to displace low-working concrete at the neutral axis without impairing structural strength. In the construction of floor slabs for The Boulder Life Insurance Co. Building, SONOVOIDS were used to eliminate the dead weight of concrete and to save materials and money.

Metal end closures were used in the SONOVOIDS. Special tie-down rods, with spacers attached, prevented the SONOVOIDS from "floating" and assured exact positioning prior and during the pour.

Easy-to-handle, low-cost SONOVOIDS are specifically developed for use in bridge decks, wall, floor, roof and lift slabs; also in concrete piles. For poststressed or prestressed units or units cast in place.

Available in Sizes from 2.25" to 36.9" O.D. up to 48' long.

Order in specific lengths or saw to your requirements on the job. End closures available.

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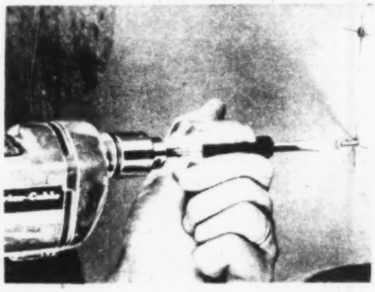

New Screwdriver Drill Kit Speeds Up Woodworking

Porter Cable's Model 161-SKD screwdriver-drill kit speeds up two woodworking jobs.

In one operation, the screwsetter drills pilot holes for the threaded portion and shank of screws, countersinks for the screw head, and counterbores for putty and wood plugs. The drill bit is adjustable for every standard screw length and stops automatically at the correct depth. Enough power is developed by the 1.8 amp, 2,450 rpm motor to drill up to ½ in. in wood and ¼ in. in steel.

The drill is converted to a power screwdriver by inserting the screwdriver attachment into the chuck. Two bits, one for slotted screws and one for Phillips-head screws, are furnished.

Housed in polished die-cast aluminum, the drill weighs 2 lb 13 oz, measures 5⅞ in. high, 2½ in. wide and 7½ in. long, and has a 7-ft electric cord.

Included in the kit are a ¼-in. drill, screwsetter and screwdriver attachment, three drills and carrying case. PORTER-CABLE MACHINE CO., 99 EXCHANGE ST., SYRACUSE, 8, N. Y.

Autoclaved Clapboard Has Increased Strength

A cement-asbestos siding now on the market is cured under high-pressure, high-temperature steam, a treatment said to make the material dimensionally stable. Called Autoclave Clapboard, the product will not burn, rot, shrink or warp, according to the manufacturer.

Available in white and a variety of colors, the panels are surfaced with Duroc, a material said to seal in the color so that it will not crack or peel. Protective painting is unnecessary.

For fast application, the clapboard is made in panels 48 in. long and provides a 7¾ in. exposure with a 1 in. headlap. The clapboard should be applied over wood undercoursing strips to provide a shadow edge and better nail anchorage. THE RUBBEROID CO., 500 5TH AVE., NEW YORK 36, N. Y.

Publications

Trucks—A 16-page bulletin describes a new and complete line of highway capacity trucks, now on the market. Kenworth Motor Truck Co., 8801 E. Marginal Way, Seattle 8, Wash.

Hoists—A catalog covering key features and specifications of hand hoists, pull-lifts and plain and geared hand-hoist trolleys is available. The 44-page booklet describes the machines in detail, and includes information on how to select proper hoisting equipment. Yale & Towne Manufacturing Co., 11,000 Roosevelt Blvd., Philadelphia 15, Pa.

Rubber products—Twenty-three products for the construction industry are described in a new "Contractors Products" catalog. Twelve pages, the manual gives application data, construction details and sizes for elevator belting, air, water steam and welding hose, and brake linings. Thermoid Co., Trenton 6, N. J.

Wrecker—Orton uses a new six-page pamphlet to describe its diesel wrecker and the combination wrecker, pile driver and bridge derrick. Orton Crane & Shovel Co., 608 South Dearborn St., Chicago 5, Ill.

Plastic resin—A four-page bulletin describes chemical, dielectric, temperature and friction characteristics of "Teflon" —duPont tradename for tetrafluoroethylene resin—which comes in tubing, rod, lining, machine parts and sheeting. Bulletin T-50. Halocarbon Div., Haveg Industries, Inc., 900 Greenbank Rd., Wilmington 8, Del.

Hydrological instruments—A 12-page booklet describes operation and features of current meters, water level recorders, hook gages, rain gages and wind instruments of the Gurley line. A price list is included. Bulletin 700. Industrial Div., W. & L. E. Gurley, Troy, N. Y.

Waste treatment—Bulletin J-30 deals with treatment of liquid waste with activated carbon to remove organic impurities, using the "Adsorbit" systems. Barnebey-Cheney Co., Cassady at Eighth Aves., Columbus, Ohio.

Nuclear reactors—Bulletins describe two types of nuclear reactors. N-56-8 deals with the aqueous homogeneous burner reactor and N-59-9 with a tank-type research reactor. Foster Wheeler Corp., 165 Broadway, New York 6, N. Y.

LOW-COST
SONOTUBES®
form 3-foot diameter concrete piers for overpass bridge!

Overpass for side roads, New Hampshire Turnpike, Dover, N.H., State of N. H., owner. Landers and Griffin, contractors. Hayden, Harding & Buchanan, engineers. Photo by Zambello.

SONOTUBE® SONOCO
FIBRE FORMS
for round columns of concrete

Both 36 and 30 inch Sonotubes were used as formwork for the round concrete piers of this highway overpass bridge on the New Hampshire Turnpike. Forming for caps tie-in easily with the fibre forms of the supporting piers

Sonotubes save the contractor time, labor and money.

Sonotubes are approved by architects and engineers and are widely used by contractors everywhere. Sonotubes are specifically designed for use in the construction of piers, piles, underpinning and other structural uses.

Order Sonotube Fibre Forms for your next job . . . available in sizes from 2" to 48" I.D. up to 48' long. Can be supplied in specified lengths or sawed to size on the job. For finished columns, order Sonoco's patented "A-Coated" Sonotubes; wax-coated also available.

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Financial Aid to Higher Education

A Fine Start, But...

This editorial has two purposes. The first is to salute American business for the fine start it has made in helping to relieve the financial plight of our colleges and universities. The second purpose is to stress the importance of having business provide more financial aid, and soon.

How Business Helps Higher Education

Business contributions to higher education doubled between 1950 and 1955. They jumped from $40 million to $80 million. Preliminary figures indicate they will be even higher this year.

Business firms have also shown a lot of ingenuity in devising different ways of making their contributions. The methods range from a matching of an employee's contribution to his particular alma mater to wide diffusion of the money through state and regional money-raising associations of colleges and universities. Thanks to this ingenuity, business firms now have a wide choice of ways by which to give effective aid. The way most appreciated by college administrators is the making of gifts unrestricted as to the purpose for which the money is used.

Imposing as it is, however, what business has done thus far is only a good start. Only a tiny fraction of the total number of business firms in the country are giving direct financial help to our colleges and universities; and this fraction includes fewer than half of the hundred largest corporations in the country. Also, the amount of financial help being provided by business constitutes only a very small fraction of what is needed.

Why Colleges Need More Aid

Right now our privately endowed colleges and universities need about $350 million more in operating income a year than they are receiving to enable them to pay decent faculty salaries and be in tolerably good working order otherwise. The reasons, including a severe decline in the purchasing power of their endowment income because of price inflation, have been dealt with in the previous editorials in this series.

In addition, these institutions, together with the tax-supported schools, are faced with a tremendous increase in enrollment over the years ahead. With both a rapidly increasing population of young people and an increasing proportion of them going to college, this year's enrollment of 3.2 million students is expected to reach 4.0 million by 1960, and to be doubled by 1970.

For the next ten years our privately supported colleges and universities must have an average of about $400 million a year above what they can be expected to collect from tuition fees, income from endowment funds, etc.

This figure of $400 million does not include what is needed for new buildings and equipment. It also does not include help for tax-supported schools above what they get from taxes, fees, etc. Business has given and will continue to give these schools substantial aid. Indeed, almost 25% of the financial help from business for our colleges and universities went to tax-supported schools in 1955.

If aid from business met their needs for increased operating income, the privately supported colleges and universities would be given a decisive lift in performing successfully their part in our system of higher education. They would still have large needs of capital equipment — buildings, dormitories, laboratories — but help from other sources, such as that provided by devoted alumni, where they are well organized, could be expected to go far toward meeting these needs. Also some companies prefer to concentrate on meeting needs of this type.

What 1% of Profits Would Do

But do business firms have the capacity to fill the gap in adequate operating income for our privately endowed colleges and universities without putting an excessive financial burden on themselves? Those who have studied this capacity carefully say that the answer clearly is yes. If, of its profits before taxes — last year an estimated $43 billion — business were to devote 1% to helping our privately endowed colleges, it would take care of present operating needs of about $350 million a year. And the balance of $80 million would be a big step in meeting their needs for new buildings and equipment, too.

About one half of a 1% contribution of this sort would, in effect, be made by the federal government. Up to a limit of 5%, contributions of this type are exempt from the federal corporate income tax. For corporations with incomes above $25,000 per year this tax is 52%.

It is clear that not all business firms are in shape to devote 1% of their profits to aid to higher education. Even in this year of record-breaking prosperity, many of them will have no profits at all. But if business generally would take 1% of pre-tax profits as a target or benchmark for financial help to our privately endowed colleges and universities these institutions would again have sturdy financial foundations.

Relatively this is a very small price to pay (1) to insure a continuing supply of competently trained young men and women and (2) to buttress our freedom by assuring the successful survival of the privately supported sector of our system of higher education.

This is one of a series of editorials prepared by the McGraw-Hill Department of Economics to help increase public knowledge and understanding of important nationwide developments of particular concern to the business and professional community served by our industrial and technical publications.

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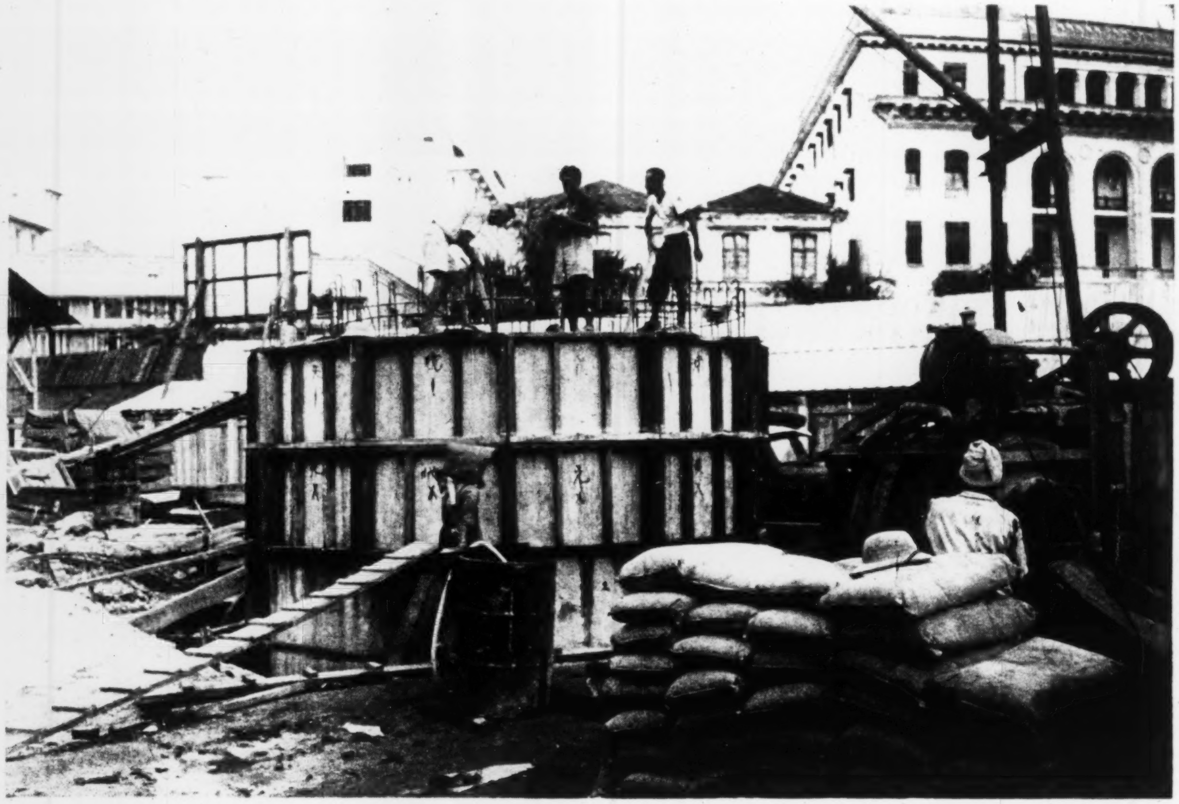


Caisson, sunk 54 ft under air, is one of 28 supporting the . . .

Orient's Tallest Building

It is no accident that the new 19-story Asia Insurance Building in Singapore is the tallest building in the Far East. But it wasn't planned that way at the beginning.

As originally designed, the $8-million structure would have been 240 ft high. But before it was built, word got around that Shanghai boasted a building 8 ft taller, and at the same time, the need arose to equip the new skyscraper with a warning signal for night-flying planes.

As a result, the designers decided to top the structure with a 32-ft lighted turret of fluted stainless steel, thus extending the overall height of the building to 272 ft.

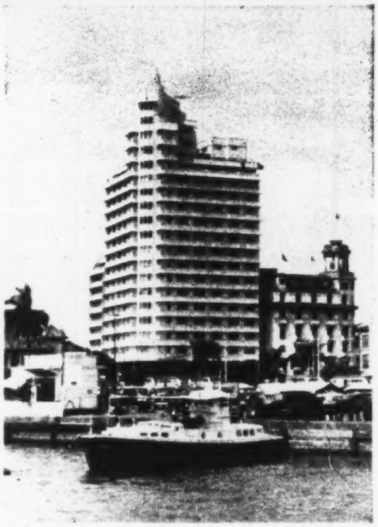
Overlooking the Straits of Malacca, the sea arm that separates the Malay Peninsula from Sumatra and joins the Indian Ocean and the South China Sea, the new skyscraper stands on a site reclaimed from the ancient Telok Ayer anchorage some 70 years ago.

The building rests on 28 concrete-filled caissons, sunk to an average depth of 54 ft and ranging in diameter from 8 to 15 ft. Constructed under air pressure, the foundations cost $800,000 and took 15 months to complete.

The building frame is structural steel, rivet-connected and encased in concrete fireproofing. Floors are reinforced concrete rib construction with hollow terra-cotta filler blocks. Walls are 9-in. terra-cotta brick. Total floor area is about 137,000 sq ft.

The project required a total of 2,000 tons of structural steel. Supplied by the U. S. Steel Export Co., of New York, through its Singapore distributor, Chin Ho & Co., the steel was detailed in the U. S. A. and fabricated at the Ambridge, Pa., plant of U. S. Steel's American Bridge Division. The material was shipped in 17 consignments, timed according to job progress on the site.

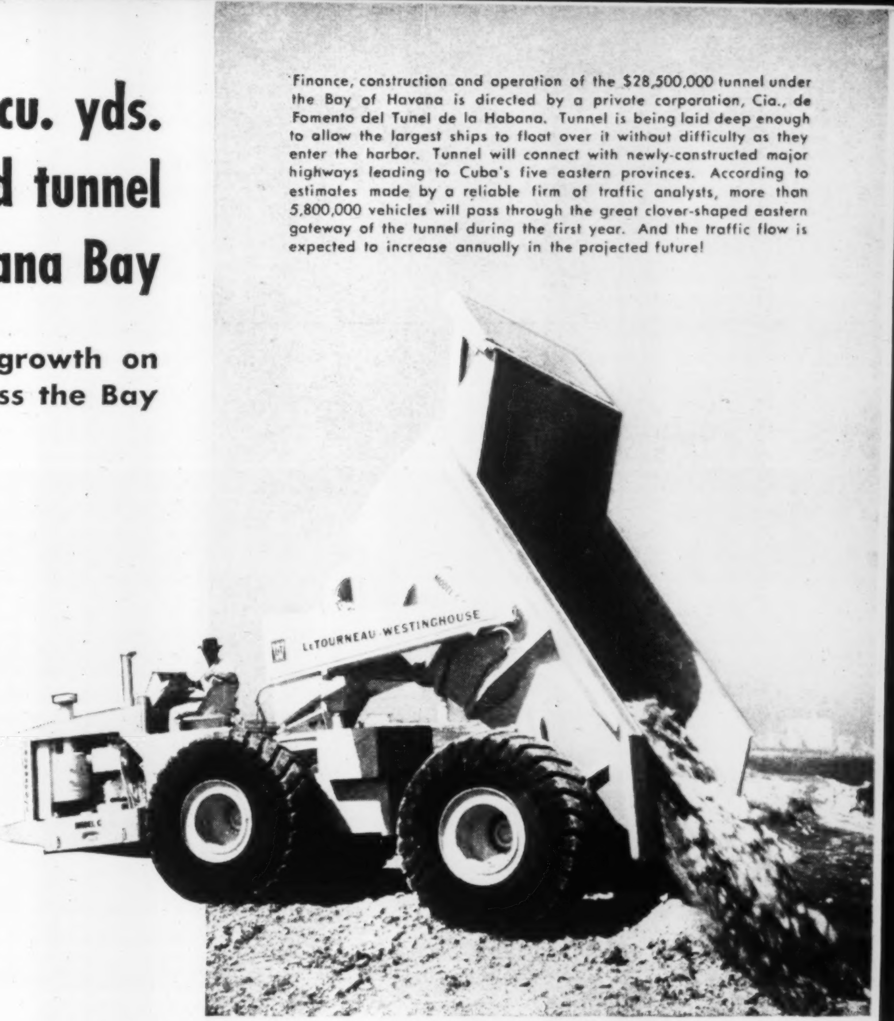
The building was designed by Ng Keng Siang, Singapore architect; Steen Sehested, also of Singapore, served as structural engineer, and Soil Mechanics, Ltd., of London, was retained as foundations consultant. Gammon, Ltd., Singapore general contractor, erected the building, including the steel frame.



19-STORY BUILDING in Singapore rises on site reclaimed from ship anchorage.

Haul 15,000,000 cu. yds. of rock to build tunnel under Havana Bay

Predict 80% of city growth on newly-opened land across the Bay



Finance, construction and operation of the $28,500,000 tunnel under the Bay of Havana is directed by a private corporation, Cia., de Fomento del Tunel de la Habana. Tunnel is being laid deep enough to allow the largest ships to float over it without difficulty as they enter the harbor. Tunnel will connect with newly-constructed major highways leading to Cuba's five eastern provinces. According to estimates made by a reliable firm of traffic analysts, more than 5,800,000 vehicles will pass through the great clover-shaped eastern gateway of the tunnel during the first year. And the traffic flow is expected to increase annually in the projected future!

Tournapull dumps a load of rocky spoil blasted from the tunnel. Across the Bay can be seen the tall commercial buildings of downtown Havana.

Since the days when pirates roamed the Caribbean, Havana Bay has effectively divided northern Cuba into east and west. Over the years, Havana has become more and more congested, while the extensive lands just across the narrow bay inlet have remained undeveloped, due to their inaccessibility.

To open this vital eastern area to the growing city's needs, a 4-lane auto tunnel is being built under the harbor entrance channel. It will cut automobile travel time between the new suburb east of the city and the downtown section of the capital, to *only two minutes.* City officials predict that, with the new access highway, the area east of the harbor will absorb 80% of the city's growth.

Move vast quantities of rock

To dig this important 30-acre tunnel under the Bay, the contracting firm Societe des Grands Travaux de Marseille must move 15,000,000 cubic yards of blasted rock. Outstanding in the fleet moving this material are six Model C Tournapull Rear-Dumps, of 22-ton capacity.

LeTOURNEAU-WESTINGHOUSE

Tournapull Rear-Dump is shovel-loaded with 15 cu. yds. of blasted rock, excavated for the eastern approach to the "Tunnel of Havana". Tournapulls traveled around the Bay from the dock in the city, to this work site at tunnel entrance, under their own power. The 8-mile trip took about an hour.

Traveling typical .6-mile cycles, each of these Rear-Dumps hauls out 15 cubic yards of blasted rock from the tunnel site every 16 minutes.

Haul up 12% grades, across rock, through mud

These 208 hp Rear-Dumps must constantly travel over sharp, uneven, newly-blasted rocky footing. Haul is up and down grades ranging to 12%. Rainy weather presents a further obstacle to fast hauling. Rain water collects in scattered pockets of earth, and in the rock floor of the tunnel approaches. This water forms slick, slippery patches of mud that slow down the haulers. But despite the rocky, hilly, sometimes slippery route, the earthmoving fleet on tunnel excavation has moved 60% of the rock in about 50% of the scheduled time.

Investigate Tournapull advantages

On the biggest, most demanding earthmoving projects all over the world, you will find modern LeTourneau-Westinghouse equipment at work. The next time you have earth to move, it will pay you to investigate the advantages offered by heavy-duty Tournapull Rear-Dumps. There are three sizes to fit your requirements with 11, 22- and 35-ton capacities. Write us for complete information.

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Men and Jobs

Dean Saville to Leave NYU At Start of 1957 Fall Term

Thorndike Saville, dean of the New York University College of Engineering for the last 20 years, has announced his retirement effective with the start of the 1957 fall term.

Dean Saville, who will be 65 next October, is retiring a year ahead of the university's compulsory retirement date. He cites as one reason for this action the increasing requests for his consulting services in the fields of his authority—water supply, hydrology and coastal engineering.

In 1932, Saville joined NYU as professor of hydraulic and sanitary engineering and was made dean in 1935. Under his direction the university's college of engineering formed a graduate division and a research division. As administrator, Saville heads a college with an annual $2-million academic budget and a $3-million annual budget for research.

The dean is a past president of the American Society for Engineering Education, Engineers' Joint Council, and Engineers' Council for Professional Development. In the last two offices, which he held simultaneously, he was the prime-moving force behind the engineering profession's planned self-analysis (ENR Mar. 22, 1956, p. 67).

At the present time, Saville is a member of the U. S. Beach Erosion Board, the Delaware River Basin Advisory Committee and the N. Y. State Public Health Council.

Turner's Chief Engineer Becomes Vice President

Turner Construction Co., New York City general contracting firm, has announced the election of Michael J. Roach as a vice president. Roach, with Turner since 1916, has been chief engineer of the company since 1947.

H. Thom Noyes has been appointed chief engineer to fill the post vacated by Roach. Noyes has been assistant chief engineer since 1947. He joined the company in 1927.

Tishman Promotes J. Pruyn To Post of Vice President

John A. Pruyn has been elected vice president of Paul Tishman General Contractor, Inc. Pruyn, a registered architect, assumes management responsibilities, heading architectural planning in relation to the urban-redevelopment work now undertaken by the company in volume.

Pruyn, a Cornell graduate, was president of Howard T. Fisher & Associates, Chicago architectural-engineering firm, for five years prior to joining Tishman in mid-1956. He took part in the development of shore facilities for the U. S. Navy in the South Pacific area from 1941 to 1947.

USBR Makes I. P. Head Regional Project Engineer

Ivan P. Head has been appointed regional project development engineer for U. S. Bureau of Reclamation Region 2. He succeeds A. N. Murray, who recently was appointed assistant regional director; regional director is C. H. Spencer.

Over the last 20 years Head has dealt with plans for conservation of water resources in Wyoming, Colorado, Utah, Oregon and California. For the last four years, he served as assistant regional project development engineer in the Sacramento regional office of the bureau.

William W. Brush Retires; 62 Years a Waterworks Man

William W. Brush, a waterworks man for 62 years, has just retired as editor of WATER WORKS ENGINEERING.

The perennial treasurer and one-time president of the American Water Works Association became an editor after a lifetime of service, 40 years in the waterworks of New York City. He joined the Bureau of Water of Brooklyn in 1894 and was chief engineer of the Bureau of Water Supply, Department of Water Supply, Gas & Electricity, when he retired in 1934.

He now retires again, after 22 active years in his editorial post, and at a vigorous 82 years of age.

Fairbanks, Morse Chairman Announces His Resignation

Robert H. Morse, Sr., announced last week his intention to step down as chairman and chief executive officer of Fairbanks, Morse & Co., Chicago maker of industrial equipment.

The 78-year-old executive said in his retirement statement that the current fight with Penn-Texas Corp.—which is seeking to gain control of FM—had nothing to do with his decision. Penn-Texas officials, however, accused Morse of quitting under fire.

He suggested that his son, Robert H. Morse, Jr., should take over in his place. The younger Morse has been president of the firm since 1950.

Men & Jobs Briefs

Associations–Henry J. Degenkolb is the new president of the Structural Engineers Association of Northern California. . . . **William H. Comte, Jr.,** has been elected president of the Toledo, Ohio, chapter of the Associated General Contractors of America. . . . **Marion F. Ross,** vice president of Garwick & Ross, elected president of the Columbus, Ohio, Builders Exchange. . . . **Harold B. Husted** elected president of the Mahoning Valley chapter of the Ohio Society of Professional Engineers.

Business–S. T. Mackenzie elected a vice president of Babcox & Wilcox in charge of sales. . . . **J. E. McWilliams** and **Howard M. Winterson** elected vice presidents of the Blaw-Knox Co. in Pittsburgh. . . . **John A. Edwards,** chief consulting engineer for Joseph N. Farlow engineering firm in Raleigh, N. C., has purchased the company and will operate it as the John A. Edwards Engineering Co. . . . **Andrew H. Schneider** has opened his own engineering office in Cincinnati. . . . **Moses E. Cox** joins Patchen & Zimmerman Engineers as special representative in the Atlanta, Ga., office. . . . **David Picket,** president of Gotham Construction Co. elected chairman of the board of the New York firm. . . . **Don Abel** of Chehalis, new chairman of the Washington State Public Service Commission. . . . **James P. Haight** is the new vice president in charge of engineering and purchasing for Alcoa. He succeeds **Thomas D. Jolly,** who retires after 42 years of service with the company. . . . **Henry K. Evans** and **Curtis J. Hooper** have joined the consulting firms of Wilbur Smith & Associates. . . . **Ray B. Wheeler** has been appointed chief designer for the industrial design firm of Van Dyck Associates, Westport, Conn. . . . **Kenneth G. Ellsworth** is the new director of public relations for the American Standards Association in New York.

Careers–Lt. Col. Henry C. Whitting, presently at Fort Ord, Calif., will become executive officer of the Little Rock District of the Corps of Engineers on Feb. 11. . . . **L. C. McDuffie** has been named chief of the engineering division of the Wilmington, N. C., Corps of Engineers. . . . **George H. Aull,** city manager of Elberton, Ga., has been named manager of Lexington, Ky.

Retirements. . . . **Joseph Brobston,** chairman of the board of Hercules Cement Co. . . . **Herbert A. Waterman,** assistant construction engineer for the California division of highways.

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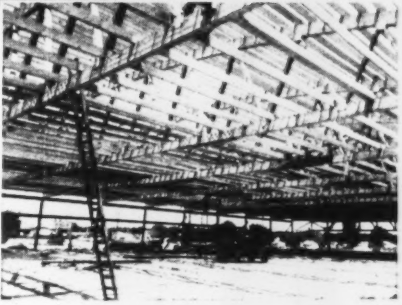

Using the latest construction methods, contractors completed Eavey's Supermarket in Fort Wayne, Indiana, ahead of schedule and ahead of budget!

The electrical contractor reported hanging 10,000 feet of conduit carrying 350,000 feet of wire, with RAMSET, using 100,000 fasteners for the job. About $10,000 and two full months were saved by using speedy RAMSET SYSTEM, according to George Clement, service engineer for Eavey's. Other contractors saved in the same way.

RAMSET FASTENING SYSTEM can be used in a variety of ways on most jobs: electrical, plumbing, air conditioning, door, window and wall installations. Moreover, RAMSET is just as valuable in the plant maintenance operation as to the original builders and contractors.

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Obituaries

Harry Christiansen, 62, Green Bay, Wis., engineer, died there Dec. 23. Christiansen had been chief engineer for the Lake Michigan water supply project for the city and for 11 years had been chief engineer for Alvord-Burdick & Howson, Chicago consulting engineers. He had supervised construction of part of the Chicago subway system.

Robert E. Taylor, 46, project superintendent for the Austin Co. in Cleveland, died Dec. 24. He had been with the firm for 16 years.

Ralph Riblet, 67, a retired civil engineer, died Dec. 25 in Bradenton, Fla. A graduate of Pennsylvania State University, Riblet had practiced in Erie, Pa., for 20 years before retiring.

Collin W. Garriott, 53, a civil engineer with the Army Corps of Engineers for the last 16 years, died Jan. 10 in Louisville, Ky. He was a 1930 graduate of Purdue University.

Wilbur J. Hammersley, retired engineer for Republic Steel Corp., died Jan. 7. He was a civil engineer at Republic's Cleveland plant from 1940 until 1955. Before joining Republic he was chief engineer of the Newburgh, N. Y., mill of American Steel & Wire Co.

Edward J. Flanagan, 68, chief engineer of Bronx County, New York, died in New York City on Jan. 13. He had worked with the New York City Planning Commission for 10 years.

Harold J. Rooney, 52, who headed the Hartford office of the New York City consulting engineering firm of Howard, Needles, Tammen & Bergendoff, died Jan. 13 at Hartford, Conn. Rooney, a graduate of Rensselaer Polytechnic Institute, also has served as a civil engineer for the State of New York, and as a consulting engineer on the Massachusetts Turnpike and the Connecticut flood recovery program.

John Russell Montague, 65, director of engineering for the Ontario Hydro-Electric Power Commission for the last eight years, died in Toronto Jan. 19. A 1914 graduate of the University of Toronto, he joined Ontario Hydro in 1918 as design engineer. During his 38 years with the commission, Montague was responsible for the design of most of the hydroelectric plants in Ontario, including those at Niagara Falls.

Unit Prices

Prestressed Concrete Pipe For Water Main, Virginia

Arlington County, Virginia, designed this 6,600-lin ft water main for three alternates, prestressed concrete pipe, non-prestressed concrete, and steel pipe. But only the prestressed concrete alternate drew bids. This water main will supply the city of Arlington. Alexander Potter Associates, New York, are the consulting engineers.

The $208,230 contract to Nance & Vivadelli of Arlington beats the nearest competitor by 3% and the high fifth bidder by 28%.

Work includes 4,400 lin ft of 30-in. prestressed concrete pipe, 2,000 lin ft of 16-in. class 150 cast iron pipe with manholes, valves, connections and hydrants. The contractor will furnish all materials.

The five bidders include:

1C	Nance & Vivadelli, Arlington, Va	$208,230
2	A. J. Ellis Constr. Co., Philadelphia, Pa.	214,958
5	No. American Contracting Co.	288,991

Bids: 11 30 56 Items	Unit	Quantity	Unit Prices 1	 2
Exc, unclassif, addtnl	cy	300	$2.50	$4.00
Bkfl, sand or gravel	cy	300	7.00	3.00
Wood sheet left ip, const	Mbm	50	100.00	10.00
Exc, rock	cy	200	15.00	15.00
CIP, cl 150, 6"	lf	200	6.50	6.00
8"	lf	10	7.50	9.00
12"	lf	25	12.50	12.00
16"	lf	2,000	9.95	9.50
Fittings, CI, 12" and less	lb	2,700	0.30	0.50

Bids: 11 30 55 Items:	Unit	Quantity	Unit Prices 1C	 2
Fittings, CI, over 12"	lb	11,000	0.33	0.50
Gate valves, 8"	ea	3	130.00	175.00
12"	ea	3	245.00	300.00
16", geared	ea	3	900.00	900.00
Cone valves, 2 1 2"	ea	6	45.00	35.00
18"	ea	3	5,000	5,000
Valve boxes	ea	21	15.00	25.00
Manhole, cone valve	ea	3	1,700	2,000
pump-out	ea	5	700.00	700.00
Connects to exist main	ls	job	4,440	2,000
Conc, cl A, misc	cy	10	50.00	45.00
cl B, misc	cy	100	30.00	40.00
Steel, reinf	lb	1,000	0.15	0.20
Pvmt, conc, restore	lf	10	10.00	10.00
macadam, restore	lf	10	4.00	3.50
asph on conc base	lf	10	5.50	5.00
temporary, const	lf	2,600	2.50	3.00
Water pipes, exist, relocat	lf	50	6.00	10.00
Gas mains, exist, relocate	lf	50	8.00	3.00
Sewer hse connects, relocat	lf	100	4.50	7.50
Water hse connects, relocat	lf	100	4.00	4.00
Pvmt, bit conc, restore	lf	10	2.50	6.00
Storm sewers, 24"	lf	1,050	6.15	10.25
18"	lf	250	4.70	8.10
Manholes, storm sewer	ea	6	175.00	225.00
Catch basins	ea	2	200.00	300.00
Total base bid			$90,330	$93,633

Alternate for Steel Pipe

Water main, steel, 30"	lf	4,400	....	....
Hydrants	ea	7	....	....
Gate valves, 6"	ea	21	....	....
Valves, air inlet	ea	8	....	....
air release	ea	14	....	....
Manhole, air release & inlet for steel pipe	ea	4	....	....

Alternate for Prestressed & Non-Prestressed Concrete Pipe

CP, prestressed, 30"	lf	4,400	21.00	22.00
non-prestressed, 30"	lf	4,400		
Fittings, conc pipe	ls	job	21,420	20,000
Hydrants	ea	8	220.00	300.00
Gate valves, 6"	ea	13	90.00	75.00
Valves, air release	ea	7	100.00	100.00
Manhole, air release on RCP	ea	1	450.00	450.00
Subtotal Alternate			$117,900	$121,325

Illinois Sanitary Sewer Crosses Golf Courses

This 19,000 ft of 54-in. reinforced concrete interceptor sewer includes 5,000 ft to be laid in public and private golf courses. To restore these to playable condition, the contractor must compact the backfill to minimize after settlement and resod the fairways.

Skokie Outlet Sewer in Waukegan, Illinois, will cost the North Shore Sanitary District $796,337. Greeley & Hansen, Chicago, are consulting engineers.

Louis Scully and Sons, Chicago, took the contract at a bargain price, 30% below the engineers' estimate and 4.7% below the second low bid.

Pipe is priced at $34.30 to $42.50 per lin ft. This includes excavation to an average depth of 15 ft, backfill, compacting and resodding. Specifications require ASTM standard C-76, table 1, and rubber joints.

The contractor has 360 calendar days to complete the job. However, work in public golf courses is permitted only between September 1 and May 1.

Hourly wage rates prevailing in the Chicago area are $3.62 for bricklayers, $3.60 for power crane and shovel operators, $3.55 for structural iron workers, $2.57 for common laborers and $2.08 for drivers.

The ten bidders include:

1C	Louis Scully & Sons, Chicago, Ill	$796,337
2	Boncar Const. Co., Chicago, Ill	835,361
10	Michael Pontarelli, Inc., Chicago, Ill	1,636,466
EE	Greeley & Hansen, Chicago, Ill	1,138,741

Bids: 11 15 56 Items	Unit	Quantity	Unit Prices 1C	 2
Exc, earth, addnl	cy	500	$2.25	$2.35
rock	cy	10	15.00	20.00
Fill material, selected	cy	3,000	3.25	2.50
Wood sheeting, left in place	Mbf	20	75.00	150.00
Concrete, cl D	cy	50	30.00	40.00
Iron castings	lb	30,000	0.25	0.20
Brick masonry, addnl	cy	5	65.00	100.00
Manhole base, 4' diameter	ea	35	250.00	600.00
barrel, 4' diameter	lf	380	25.00	20.00
drops, standard	lf	75	20.00	30.00
Pavement, permnt, replace	sy	100	10.00	12.50
permnt, replace	sy	50	8.00	8.00
RCP, sewer, 54"				
sta 0 + 00 to 41 + 85	lf	4,185	34.30	39.25
41 + 85 to 95 + 99	lf	5,414	42.00	39.50
95 + 99 to 122 + 19	lf	2,620	40.00	44.00
122 + 19 to 188 + 58	lf	6,639	34.50	36.00
188 + 58 to 192 + 33	lf	375	42.50	39.30
Overflow facilities	ls	job	8,650	9,500
Sewage regulator & connct,				
Clavey Road	ls	job	7,560	6,000
Half Day Road	ls	job	8,500	10,000
Connections, sta 48 + 04 9	ls	job	1,260	2,000
Deerfield Road	ls	job	750.00	900.00
West Park Ave	ls	job	2,400	3,800
Junction chamber	ls	job	3,500	3,150

Time to complete: 360 calendar days
Liquidated damages: $50 per day

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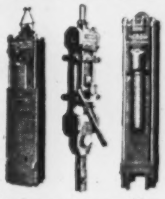

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Materials and Labor Prices

Monthly Market Quotations by ENR Field Reporters

See following ENR issues for OTHER PRICES

- Cement, Aggregate, Ready-mixed Concrete, Asphalt: Last, Jan 10; Next, Feb 7
- Iron and Steel Products, Pipe: Last, Jan 17; Next, Feb 14
- Wood Products, Glass, Explosives: Last, Jan 24; Next, Feb 21
- Clay Products, Lime, Plaster, Paint, Roofing: Last, Dec 27; Next, Feb 28

STRUCTURAL CLAY BUILDING TILE, BRICK AND LIME—DELIVERED

	STRUCTURAL CLAY TILE PARTITION SCORED Per M. lots of 2,000 pieces or over, 3x12x12 in.	4x12x12 in.	8x12x12 in.	STRUCTURAL CLAY TILE LOAD BEARING SCORED Per M. lots of 2,000 pieces or over, 8x12x12 in.	10x12x12 in.	12x12x12 in.	BRICK Per M. in quantity Common backing	Straight hard	LIME Per ton, in paper, Carload lot, Hydrated finishing	Common hydrated	Pulverized or lump
Atlanta	$149.90p	$149.90p	$299.80p	$334.55p	......		$30.50p	$32.70p	$23.50	$24.50	$.....
Baltimore	203.00	217.00	406.00	485.50	596.00	681.00	36.00k	41.00k	33.00	22.00	.....
Birmingham	135.00p	152.00p		303.00p	376.00p	465.00p	27.00ff	38.00gg	34.45	22.30	26.33
Boston	210.60†	224.60†	421.10†	467.80†	......	......	40.00p	44.00p	35.20†	30.00†	.....
Chicago	135.00	145.00	280.00	......	......	......	30.00	32.00	38.00	35.20o	.....
Cincinnati	205.00j	225.00j	296.00jdd	213.00j	288.00j	314.00j	45.00j	46.00j	28.50j	24.25j	28.50j
Cleveland	202.50	215.00	......	......	......	......	43.00	47.00	31.00	26.00	.....
Dallas	......	152.00	......	......	......	......	25.75	45.00	37.86	25.08	.....
Denver	......		......	......	......	......	36.00	47.50	34.80bb	28.00bb	34.00bb
Detroit	213.00	226.00	425.00	......	620.00	710.00	44.00cc	45.50cc	36.00	32.00	.....
Kansas City	127.50	147.50	270.00	270.00	340.00	400.00	33.00	33.00	40.00	38.00	34.00
Los Angeles	r	r	r	r	r	r	30.50§	.....	34.00	34.00	35.00
Minneapolis	188.00p	210.00p	429.00p	210.00pw	......	......	43.00•p	52.50ii	45.50bbe	35.50bbe	47.50bbde
Montreal	170.00aq	178.00au	325.00au	270.00	400.00	......	42.00	49.00	39.00	22.00	13.25u
New Orleans	186.00	186.00	380.00	380.00	......	......	40.00	55.00	44.00	32.00	32.00
New York	158.10h	168.60h	231.70ch	233.90hn	......	......	44.00	.....	37.00	35.00	.....
Philadelphia	156.30	166.80	312.70	375.20	......	......	30/34	34/40	27.60	25.60	3.17
Pittsburgh	154.00	162.00	292.00	340.00	420.00	495.00	.....	.....	.....		.....
St. Louis	178.50cc	203.00cc	358.00cc	500.00cc	......	......	43.00sl	41.50s	0.95saa	.80saa	1.30ss
San Francisco	156.85•	177.10•	235.30dd•	......	......	......	42.50•	42.50•	27.75	27.75	30.50
Seattle	225.00cc	250.00cc	450.00cc	250.00ccw	......	......	43.00s	57.00s	48.00shh	38.25hh	3.90mhh
Toronto	138.70	148.70	273.75	222.00f	......	......	25.00	63.00	36.00	33.50	31.00

•† F.o.b. yard Roxbury. •a Smooth. •b Per 50 lb. bags. •c 6 x 12 x 12 in.-3 cell. •d Pulverized hot. •e 5%, 10th following month. •f 8 x 8 x 12. •g 5½ x 8 x 12. •h F.o.b. trucks, job site N.Y.C. •j Truck load or over. •k $1.00 discount. •l Red face. •m Per bbl., 180 lb. •n 7¾ x 7¾ x 12. Speed tile. •o mason's double hydrated pressure. •p Truck lots. •q Provincial and Municipal tax extra. •r Not used because of earthquake danger. •s 2% discount for cash. •t 5½ x 8 x 11¼. •u Tax exempt. •v Sand lime. •w 5 x 8 x 12. •y Stacked. •z Pebble lime price per 80 lb. sack. •aa Price per sack. Lime not sold per ton. •bb LCL. •cc Truck delivery. •dd 6 x 12 x 12. •ee Pebble, lime. •ff 80% common. •gg Rough $40.00 Smooth. •hh lcl. •ii Chi common. § F.o.b. yard. •• F.o.b. plant Stockton

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Atlanta	$19.25	$28.275	$3.59	$3.86	$3.31	$3.15	$2.15	$2.49	$0.63	$57.75
Baltimore	19.00	27.90	2.75	4.25	3.35	2.78	4.25	4.25	.48	50.18
Birmingham	19.25	28.275	3.90	3.40	....	3.37	2.80ii	2.80ii	.87ff	42.65ee
Boston	19.00	27.90	....	....	....	3.30gq	2.83og	2.83og	.45g	56.00g
Chicago	19.00	27.90	....	....	....	3.26‡u	2.86‡o	2.89‡o	45.50‡bbv	55.70‡
Cincinnati	19.00	27.90	.	...	...	2.75	2.36	2.39	.594y	52.36
Cleveland	19.00	27.90	2.3804pgg	2.5913gg	2.7863gg	3.10q	2.50o	2.50o	.454y	47.00hh
Dallas	19.25	28.65	....	3.13B	....	3.00q	5.00o	3.00o	.464	65.00hh
Denver	19.50	28.40	3.29	5.15	3.04	2.84	2.30o	2.30o	.48ff	45.00
Detroit	19.00	27.90	3.35	3.25	2.50	3.10	2.50	2.409	.58	47.30
Kansas City	19.00	28.65	3.82	3.28	2.90	3.65ii	3.49o	3.49o	.58y	83.70
Los Angeles	19.00	28.15	3.30n	4.50n	4.20n	3.20n	2.15en	l	.70ny	l
Minneapolis	19.00	29.88/28.02	....	....	....	2.66dd	2.31hidd	2.31hidd	.46idd	48.00r
Montreal	......	21.95	5.02Dfft	5.94Efft	4.65Ffft	5.25f	4.65f	4.65f	1.60	....
New Orleans	......	......	....	....	....	2.74	2.18	2.43	0.689	....
New York	19.00	27.90	....	....	....	2.76	2.30o	2.32o	.462s	48.00•
Philadelphia	19.00	27.90	3.60	3.40/3.65	3.50/4.60	2.54	2.94	2.94	.37	48.00
Pittsburgh	19.00	27.90	3.10	3.36	3.68	3.72	2.85o	2.85o	.42	58.75
St. Louis	19.00	27.90	....	....	....	2.86s	2.36h	2.36h	.46y	54.35
San Francisco	19.00	28.15	2.95	4.15	3.40	2.70	1.85••	2.84aa	.56	54.00
Seattle	19.00	28.40	3.47mcc	4.19mcc	....	3.58mqcc	3.10hmcc	....	.50mcc	47.20••
Toronto	......	......	....	....	....	4.45	4.10e	4.65o	1.70j	88.00A

•‡ Delivered. • Note: Red lead in oil 50¢ higher than white lead in oil. •a Red lead prices change frequently due to pig lead price changes. •b U. S. War Dept. Spec. 3-49A. •c ASTM Spec. D266-31. •d 80% minimum ferric oxide. •e 15 lb. •f Per 432 sq. ft. •g F.o.b. yard, Roxbury. •h Per roll, 65 lb. •i Net carload lot prices; Minneapolis and vicinity. •j 45 gal containers. •k Per cwt. •l Not used. •m 1% discount for cash. •n F.o.b. city. •o Per 60-lb. roll. •p 6-drum, 50 gal. ea. •q Per 90-lb. roll. •r F.o.b. factory, Chicago. •s Truckload. •t Federal tax included, add 5% mun. & prov. tax. •u Per 90-lb. square. •v Per ton. •x Mineral surfaced. •y 55-gallon container. •z Drums. •aa 15 lb., 324 sq ft roll. •bb Roofers coating and cement; Price per ton. •cc LCL, truck delivery. •dd 2% cash discount. •ee Asphalt pitch in 100 lb. package. •ff 5-gal. drums. •gg F.o.b. factory. •hh Incl. freight. •ii Per roll. •A 400 lb barrels. •B ASTM Spec D-962-49. •D Std. Black. •E Ready-mixed. •F Over 80% ferric oxide. •• Aver. wt. approx. 425 to 550 lbs. drums.

PLASTER, VERMICULITE AND METAL BUILDING SHEETS & TUBING

	PLASTER† Neat per ton	Gauging per ton	VERMICULITE† Home Insulation pellets	Plaster aggregate	Concrete Aggregate Untreated	PERLITE Plaster Aggregate	Concrete Aggregate Untreated1	ALUMINUM SHEETh Flatj .102" th 36"x96" & 48"x144" per lbt	Corr roof .032" th 35"x12" per shu	STAINLESS STEEL SHEET•-TYPE 302g 20 ga 48"x96 120" per cwthh	28 ga 36"x120" per cwtmm	COPPER WATER TUBING-TYPE L 2000 ft lots per fta ⅜"b	½"c
			per bag of 4 cu ft										
Atlanta	$31.00	$36.00	$1.55s	$1.65s	$1.80sl	$1.65	$1.65	$0.424n	$6.57v	$61.44n	$67.50n	$17.68f	$24.77f
Baltimore	22.85	33.25	0.95	1.15	1.15	1.15	1.65	0.391	0.427r	56.25	64.25	0.1951	0.2745
Birmingham	33.00	39.00	1.55	1.55	1.80l	1.55	1.55	0.475	10.02	62.26	70.76	0.1768	0.2477
Boston	22.00	29.00	1.30	1.33	1.45	1.45	1.50	0.505	28.56op	59.373dd	65.51ddff	0.1768	0.2477
Chicago	26.80	26.80	1.55	1.60	1.60l	1.50	1.50	0.474	9.805#p	62.65#ee	71.15#ee	0.1768	0.2477
Cincinnati	24.87••	24.87••	1.75	1.75	1.75	1.38	1.44	0.434	9.56	65.17	78.67ff	0.1811	0.2541
Cleveland	28.00	43.00	1.13	1.16	1.24l	1.45	1.45	0.44aa	8.66	64.93	73.43	17.68f	24.77f
Dallas	29.80	31.80	1.05	1.21	1.37l	1.21	1.32	0.379	0.439r	55.00	63.00	0.195	0.2460
Denver	25.00	25.00	1.45	1.35	1.50	1.40	1.50	0.444	9.80	60.19gg	70.69gg	0.2006	0.2810
Detroit	25.00	25.00	1.28	1.32	1.41	1.54	1.61	0.455	9.235	65.00#	73.50#	14.42foo	28.83f
Kansas City	30.00	35.00	1.25	1.35	1.50	1.40	1.60	0.451	10.95	65.82	74.32	20.06f	28.10f
Los Angeles	26.20	27.20	1.25ii	1.15•	1.25ii		1.60	0.484	9.96	62.45	72.95	0.1946	0.2729
Minneapolis	32.00	32.00	1.50	1.60	1.80	1.40	1.40	0.481	9.00	65.46	78.96ff	0.1768	0.2477
Montreal	28.80	33.20	1.10	1.30	1.30	1.15t	1.15t	0.437	9.25	66.50		0.228	0.287
New Orleans	32.00	45.00	1.25	1.25	1.35	1.25	1.25	0.422	8.303	62.04	70.54	0.1214	0.2768
New York	24.00	30.00	1.25	1.25	1.30	1.30	1.30	0.474#o	9.46#a	63.23	71.73	17.68f	24.77f
Philadelphia	23.25	32.00	1.35	1.35	1.40			26.50#wx	7.50#	53.23#	60.98#	18.57f	26.09f
Pittsburgh	27.50	31.00	1.30	1.30	1.32	1.35	1.35	0.42	9.19	56.81	62.63	0.2045	0.2572
St. Louis	29.00	40.00	1.35	1.60jj	1.55	1.60	1.65	0.434	9.80	62.83	69.08	20.06fm	28.10fm
San Francisco	27.85	32.00	1.20	1.20	1.40	1.20	1.20	0.49	8.90cc	66.99	75.47	0.1768	0.2477
Seattle	38.00	41.00	1.45	1.25k	1.85l	1.40k	....	0.422	8.303	66.60	86.60	0.1715	0.2406
Toronto	28.00	45.50	1.20	1.30	1.45	....	....	0.4215	24.00	73.75	86.50	0.2929pp	0.3683pp

† trucklots, delivered • carload # delivered •a fob city •b ½" O.D. •c ⅝" O.D. •d 100"th •f per 100 ft •g 5 tons & up; cold roll, anneal & pickled; 2B finish •h 15M lb •j 1100 & 3003 alloy, mill finish •k per bag of 3 cu ft •l treated with air entraining agent •m 2-10M ft •n fob plant, fr allow •o 5M lb & up •p 100 sq ft quantity •r per lb •s 30# bag •t 36" x 96; 10.81 lb/sh; 48" x 144"; 21.7 lb/sh •u 19.31 lb/sh •v fob plant •w 48" x 144" •x 36" x 96" $13.25/sh •aa 16M lb & up •bb fob mill •cc 26" x 8-12' •dd add $0.75 cwt for boxing •ee 4 tons & up •ff 26 ga •gg add $2/cwt boxing; $0.75/cwt on skids •hh Theoretical wt for 48" x 96"; 50.4-lb, per sh. •ii 300-bag lots •jj per 100-lb bag •mm Theoretical wt: 19.7-lb per sh. •nn Deliv, warehouse means •oo ¼" O.D. •pp Incl 10% sales tax

Materials and Labor Prices

Monthly Market Quotations by ENR Field Reporters

See following ENR issues for OTHER PRICES

- Cement, Aggregates, Ready-mixed Concrete, Asphalt: Last, Jan 10; Next, Feb 7
- Iron and Steel Products, Pipe: Last, Jan 17; Next, Feb 10
- Wood Products, Glass, Explosives, Chemicals: Last, Jan 24; Next Feb 21
- Clay Products, Lime, Plaster, Paint, Roofing: Last, Dec 27; Next Feb 28

BUILDING BOARD & LATH AND INSULATION—DELIVERED TRUCKLOAD LOTS

	GYPSUM PLASTER BOARD tapered edge per Msq ft		GYPSUM BOARD LATH plain or perf per Msq ft	GYPSUM SHEATHING tongue & groove per Msq ft	FIBER BOARD SHEATHING asph impreg & coat per Msq ft		FIBER BOARD INSULATION sq edge, paint per Msq ft	MINERAL WOOL INSULATION†		GLASS FIBER INSULATION†		ALUMINUM FOIL	
	½"	⅝"	⅜" x 16" x 48"	½" x 2' x 8'	½" sq ed	25/32" T&G	½"	loose, per 40-lb bag a	3" batts per M sf	loose, per 40-lb bag a	3" batts per M sf	60# Kraft 1 side foil per roll of 250 s. f.	Expansible Blanket 2 layers foil per Msq.ft
Atlanta	$70.00	$60.00	$43.00	$70.00	$70.00	$127.00	$70.00	$1.00	$60.00	$2.00b	$75.00		
Baltimore	51.25f	44.75f	32.55f	55.00f	65.00f	108.50f	69.00f	1.30	66.50	1.60	45.00	$4.00g	$33.50
Birmingham	73.00	60.00	47.77	75.00	81.00	135.50	80.00	1.40	70.00	1.60	75.00	3.13g	
Boston	57.00m	46.50m	33.00m	52.00m	64.00m	109.00m	79.00hn	1.45	70.00	....	60.00	6.00	55.50
Chicago	67.00	52.00	43.00	62.00	87.00	125.00	87.00	1.85	80.00	....	63/65bb	5.25x	
Cincinnati	47.40w	42.35w	31.55w	50.56w	70.00w	125.00w	72.50w	1.25	60.00	1.25	73.50	3.12j	50.00●
Cleveland	60.50	55.00	40.00	65.00	70.00	111.00	78.00	1.35/1.50	75.00	1.60••	57.50••	17.50•	50/55
Dallas	58.00	55.00	42.50	65.00	73.50	122.50	70.00	1.90	65.00	1.35	65.83	4.25	....
Denver	62.00	54.50	41.30	62.00	75.90	126.30	74.90	....	71.60l	1.26e	55.00	11.60r	21.00
Detroit	57.50	49.75	36.00	60.00	59.50	99.00	59.60	.....	.	1.95b	83.00	....	
Kansas City	65.00	55.00	40.00	65.00	72.00	120.00	75.00	1.40	80.00	1.40	80.00	11.24dt	19.44
Los Angeles	64.00	59.00	0.325z	66.50	71.87	121.25	80.00	....	83.00	1.35s	64.00	4.20g	.....
Minneapolis	80.00	70.00	0.40z	80.00	70.00	140.00	78.00	1.60	80.00	1.80	80.00	8.00	
Montreal	56.00	48.00	36/39	53.00	80.00	....	63.00	1.30	56.00	1.30	56.00	18.00o	56.00
New Orleans	57.00	48.00	45.00	60.00	75.00	125.00	72.50	1.75	68.00••	.....	.....	.....	
New York	53.00	45.50	35.00	54.00	69.00	109.00	70.50	1.55	65.00	1.90h	67.00	5.20	48.80cc
Philadelphia	50.00	48.00	34.00	48.50	67.50	105.00	49.20		63/70		70/75	5.50/6	34.50/44.50
Pittsburgh	65.00	55.00	40.00	68.00	65.00	105.00	60.00	1.90	72.00	1.90	72.00	4.10	
St. Louis	65.00	55.00	39.00	70.00	75.00	115.00	80.00	1.25	80.00	1.65	62.00	6.67i	
San Francisco	54.00c	46.00	0.35z	57.00	63.00	104.00	62.00	1.60	66.50	1.60	66.50	4.95	55.00
Seattle	66.00	57.50	46.50	65.00	74.50	125.00	73.50	1.60y	74.00	1.60aaz	50.00aa	4.25g	46.50
Toronto	61.00	50.00	38.00	64.50	75.00	.....	.....	1.40	60.00		60.00	16.00o	45.45

•a for hand packing •b per 30# bag •d 40# kraft paper •e 20# sq ft bag. 4" thick •f full trailer loads •g 80# kraft paper backing •h LCL •i 40 lb roll •j 80 lb roll •l flame-proof $75.00 •m 10 ton quantities •n distributor's siding •o per Msf roll •p per sf •r per cwt •s per 35# bag •t per M sq ft •w fob city •x per sq. yd. •y 26# bag •z 32# bag •aa fob warehouse •bb 2" •cc in 250 sf rolls, of 16", 20", or 24" width.

HOURLY WAGE RATES—Base rate + fringe benefits

	Bricklayers	Carpenters	Struct. Iron Workers	Hoisting Engineers	Plasterers	Electrical Workers	Steamfitters	Common Labor Building	Common Labor Heavy Const
Atlanta	$3.35	$2.80	$3.05	$2.80	$3.00	$3.20	$3.20+25¢cc	$1.45	$1.45
Baltimore	3.45+10¢d	2.95+7½¢t	3.50+7½¢t	2.70/2.95+10¢Qd	3.25+7½¢t	3.30	3.20+7½¢t	1.80+7½¢t	1.80+7½¢t
Birmingham	3.50	2.70	3.00+7½¢k	2.52	2.92	3.175	3.17+10¢v	1.50	1.60
Boston	3.50+10¢d	3.05+10¢d	3.55+7½¢k	3.50	3.50+20¢J	3.30+12¢R	3.20+10¢d	2.30+7¢Y	2.30+7¢Y
Chicago	3.62½+7½¢k	3.35+10¢e	3.55+7½¢k	3.25+5¢m	3.54+23¢y	3.48+21¢C	3.37+22¢aa	2.57½+7½¢k	2.57½+7½¢k
Cincinnati	3.60	3.30	3.35+7½¢k	3.075/3.325	3.375	3.50+3¢N	3.50+9½¢Z	2.35	2.25
Cleveland	3.55+10e	3.575	3.50+7½¢k	3.575	3.575	3.60	3.375+10¢d	2.825	2.75
Dallas	3.70	2.95	3.12½+7½k	3.075	3.50+7½¢k	3.12½+7½¢k	3.10+7½¢k	1.55	1.55
Denver	3.75	3.075	3.00+7½¢t	2.93	3.30+7½¢t	3.00	3.17+15¢D	2.00	2.00
Detroit	3.53+20¢ve	3.20+29¢q	3.47½+20¢P	3.20+20¢vzs	3.51+24¢vl	3.50+30½¢H	3.45+14¢B	2.45+20¢vzs	2.55+10¢v
Kansas City	3.75	2.95	3.10	3.065	3.375	3.325O	3.40+7½¢k	2.155	2.18
Los Angeles	3.80	3.00+10¢d	3.40+10¢e	2.95+10¢d	3.75+12½¢S	3.60	3.525+10¢d	2.30+7½¢k	2.30+7½¢k
Minneapolis	3.425	3.00	3.17	2.95	3.10+23¢Gvs	3.12n	3.065+20¢de	2.25	2.25
New Orleans	3.25+5¢m	2.725	3.10+7½¢k	2.85+7½¢k	2.87½+5¢m	3.025+7½¢k	3.15+15¢e	1.55	1.55
New York	4.25+37¢br	3.75+30¢be	4.15+24¢r	4.00+32¢	4.00+50¢A	3.65+40¢aF	3.95+35½¢bL	2.65+21¢V	2.65+21¢V
Philadelphia	3.75+17¢i	3.385	3.80+18¢iM	3.15½/3.90½+10¢e	3.65+15¢C	3.77+15¢ue	3.75+11½¢z	2.10	2.40
Pittsburgh	3.75+17½¢ke	3.40+7½¢k	3.55+10¢gg	3.35+7½¢k	3.45+17½¢ke	4.00+7½ue	3.425+7½¢k	2.25+12½¢ff	1.98+10¢d
St. Louis	3.75+28¾¢c	3.25+7½¢k	3.25+7½¢k	3.325	3.55+7½¢k	3.60+25¢c	3.55+21¢E	2.30+7½¢k	2.30+7½¢k
San Francisco	3.75+36½¢dd	3.25½+20¢e	3.40+10¢e	2.98+10¢e	3.61+20¢ee	3.37½+23¢I	3.45+46¢K	2.325+10¢e	2.325+10¢e
Seattle	3.55+10¢d	2.94+10¢d	3.07+10¢d	3.13+20¢d	3.40+10¢d	3.25+19½¢X	3.40+21¢T	2.51+10¢d	2.51+10¢d
Montreal	2.10+14¢†	1.90+14¢†	2.00+14¢†	1.80+14¢†	2.12+18¢†	2.10+18¢†	2.12+18¢†	1.30+10¢†	1.30+10¢†
Toronto	2.66+10¢**	2.45+10¢**	2.40+10¢**	2.55+10¢**	2.45+18¢**	2.65+10¢**	2.44+10¢**	1.50+6¢**	1.50+6¢**

ENR Skilled Average (Bricklayers, Carpenters, Iron workers): $3.458. **ENR Common Average** $2.211

* Cost of living bonus now included in basic wage. † 8% fringe benefits. ** 4% vacation fund. •a 6 hr. day. •b 7 hr. day. •c 5% vac. stamp fund plus 10¢ WF for bricklayers; 4% VF for electricians plus 8¢ WF, 1% PF. •d 10¢ H&WF. •e 10¢ VF. •f 6% WF. •g 11½¢ WF. •h $2.85 homes & housing plus 7½¢ WF. •i 17¢ WF. •j 10½¢ hr. WF. •k 7½¢ hr. WF. •l 4% VF. •m 5¢ hr. WF. •n Plus 11% fringe benefits on gross wage ea. yr. •o 10¢ PF. •p 3% WF, 3% PF. •q 10¢ ins; 6% vac. and holiday pay. •r 4% WF and 20¢ PF. •s 5% W&PF, 4% VF, 1% NC, 6 PH. •t 7½¢ H&WF. •u 1½% PF. •v 10¢ WF. •w Negotiating. •x 5¢ VP. •y 23¢ WF. •z 5¢ HP. •A 15¢ WF, 15¢ PF, 20¢ B.F. •B 7½¢ VP, 5¢ PF, 1½¢ EF. •C 15¢ WF. •D 10¢ H&WF, 5¢ organ. •E 6% WF, plus travel pay per day. •F Plus $4 per day Annuity contrib. •G 3¢ Prom •H 7¢ WF, 6% VF. •I 15¢ H&WF, 5¢ for Advtg. •J 5% WF, 6 PH, 3% PF. •K 25¢ W & PF, 15¢ VF. •L 3% WF, 3% PF, 2% VF, 1% EF. •M 7½¢ PF. •N 1% WF. •O 10¢ W, 1% NECA. •P 10¢ hosp. ins.; 5¢ PF, 5¢ VF. •Q 1 drum, 2 drums 3.40/3.55+10¢. •R 10¢ H & WF, 2¢ admin. and 1¢ apprentice. •S 12½¢ H and WF. •T 21¢ H, W & VF. •U 7½¢ WF, 4% VF, 1% PF. •V 5% WF, 3% PF. •W 2% F. •X 12¢ VF, & 7½¢ H & WF. •Y 7¢ H & WF. •Z 9½¢ WF. •aa 7¢ WF, 15¢ PF. •bb 8¢ WF. •cc 25¢ WF. •dd 12½¢ WF, 14¢ PF, 5¢ Jt Bd 5¢ Prom. •ee 7½¢ FB. •ff 7½¢ ins. •gg 10¢ ins.

	Truck drivers 1½ T	Truck drivers −4 cy	Truck drivers +4 cy	Tractor Operators incl. bulldozers 34-49 hp	Tractor Operators incl. bulldozers 70-100 hp	Tractor Operators incl. bulldozers 100 & over	Tractor scraper 15-16 cy	Power cranes & shovels ½ cy	Power cranes & shovels ¾ cy	Motor grader oper	Air comp oper	Air tool oper
Atlanta	$1.75	$	$	$2.525	$2.525	$2.525	$2.525	$3.05	$3.05	$2.525	$2.30	$1.67
Baltimore	1.60+7½¢u	1.75+7½¢u	1.85+7½¢u	2.85/3.30b	2.85/3.30b	2.85/3.30b	2.85/3.30b	3.40/3.55+10¢m	3.40/3.55+10¢bm	2.85/3.30b	2.85/3.30b	2.25
Birmingham	1.60	1.79ff	2.05gg	2.66	2.66	2.66	2.80	2.80	2.80	2.76	2.385	1.75
Boston	2.195c			3.025d	3.025d	3.025d	3.025d	3.40	3.40	3.40	2.95	2.45+7¢e
Chicago	2.16+12¢rr		....	3.00+5¢a	3.15+5¢a	3.05+5¢a	2.85+5¢a	3.60+5¢a	3.60+5¢a	2.95+5¢a	2.95+5¢a	
Cincinnati	2.20oo	2.30oo	2.40oo	3.075	3.075	3.075	3.075	3.325	3.325	3.325	3.325	3.325
Cleveland	2.50+10¢m	2.50+10¢m	2.50+10¢m	3.325	3.325	3.325	3.325	3.575	3.575	3.325k	3.20	3.20
Dallas	1.55	1.55	1.55	1.55/2.625l	1.55/2.625l	1.55/2.625l	1.55/2.625l	1.55/2.625l	1.55/2.625l	1.55/2.625l	1.55/2.00l	1.70/2.00l
Denver	2.15	2.15	2.25	2.15	2.76	2.76	2.76	2.93	2.93	2.76	2.76	2.35
Detroit	2.45	2.45	2.45	3.30+10¢m	3.30+10¢m	3.30+10¢m	3.30+10¢m	3.30+10¢m	3.30+10¢m	3.30+10¢m	3.025+10¢m	2.68+20¢mm
Kansas City	2.115n	2.115c	2.19p	2.30	2.85q	2.85q	2.85r	3.095	3.095	2.71	2.85t	2.24
Los Angeles	2.405+7½¢u	2.405+7½¢u	2.435+7½¢u	3.05+10¢m	3.05+10¢m	3.05+10¢m	3.30+10¢m	3.30+10¢m	3.30+10¢m	3.30+10¢m	2.54+10¢m	2.51+7½¢u
Minneapolis	2.25	2.25b	2.40c	2.63	2.85q	3.07x	2.85	3.07y	3.33z	2.63	2.52	2.35
New Orleans	1.70	1.95	1.95	2.20+7½¢u	2.85+7½¢u	2.85+7½¢u	2.85+7½¢u	2.85+7½¢u	2.85+7½¢u	2.85+7½¢u	2.20+7½¢u	1.65
New York	2.21aa	2.75+14¢hh	2.75+14¢hh	3.37½+27¢cc	3.37½+27¢cc	3.37½+27¢cc	3.50+28¢a	4.25+31¢h	4.25+31¢h	3.50+28¢h	3.50+28¢h	3.00+15¢ss
Philadelphia	1.925/2.15+7½¢u			3.15½/3.90½+10¢m			3.15½/3.90½+10¢m	3.15½/3.90½+10¢m		3.15½/3.90½+10¢m	2.97½+10¢m	2.13½+10¢m
Pittsburgh	2.20+7½¢u	2.20+7½¢u	2.20+7½¢u	2.87½+7½¢u	3.20+7½¢u	3.27½+7½¢u	3.025+7½¢u	3.35+7½¢u	3.35+7½¢u	3.25+7½¢u	3.35+7½¢u	2.20+7½¢u
St. Louis	2.30+7½¢unn	——		3.325kk	3.325kk	3.325kk	3.325kk	3.325kk	3.325kk	3.325kk	2.775kk	2.775kk
San Francisco	2.32½+10¢u	2.32½+10¢u	2.465+10¢	3.095+10¢m	3.095+10¢m	3.095+10¢m	3.095+10¢m	3.425+10¢m	3.425+10¢m	3.255+10¢m	2.705+10¢m	2.425+10¢m
Seattle	2.63+7½¢nu	2.63+7½¢udd	2.83+7½¢uee	3.10+20¢tt	3.10+20¢tt	3.10+20¢tt	3.10+20¢tt	3.16+20¢tt	3.16+20¢tt	3.19+20¢tt	2.85+20¢tt	2.71+10¢m
Montreal	1.30+10¢ll	1.30+10¢ll	1.30+10¢ll	1.73+14¢ll	1.73+14¢ll	1.73+14¢ll	1.73+14¢ll	1.99+16¢ll	1.99+16¢ll	1.73+14¢ll	1.80+15¢ll	1.60+15¢ll
Toronto	1.53+6¢ss	1.53+6¢ss	1.59+6¢ss	1.95+10¢ss	2.05+10¢ss	2.05+10¢ss	2.05+10¢ss	2.55+16¢ss	2.55+16¢ss		2.10+8¢ss	2.10+8¢ss

•a 5¢ hr. H & WF •b lower rates, straight time, other broken •c 2-axle: 10-wheel $2.25: Eculid $2.45 •d Intermediate •e bldg constr: highway $2.55+7¢WF •f less than 2-T •g 5% WF, 3% PF •h 4% WF, 4% PF •j plus $2 pd by employer for hosp. death benefits to family •k bldg constr: steel constr $3.475 •l higher rates are union, other taken from min wage scale approved by County Commissioners Court •m 10¢ H&WF •n flatbed •o under 10 cy •p over 10 cy •q over 50 hp •r blade grader •t single •u 7½¢ H & WF •x cat oper •y up to 3½ cy •z 3½ cy & over •aa plus W & PF •bb 3% WF, 2% PF, 11 PH •cc 4% WF & 4% PF •dd up to 5 cy •ee 5 cy & over •ff over 1½ T but not over 3 •gg up to 5 tons •hh excavating •ii 4% VP •kk 7½¢ WF included in base pay •ll 8% fringe benefits •mm 10¢ H & WF, 10¢ insurance •nn 8 cy or less: 8-16 cy $2.90: 16-25 cy $3.15 •oo Plus $2.25 wk WF •rr 12¢ WF •ss 5% WF. •tt 10¢ H&WF, 10¢ PF

MEXICO CITY PRICES

In Pesos, F.o.b. City		Dec. '56	Jan. '57
Common Wages—Building (8 hr. day) (Peons)	av. per hr.	1.38	1.38
Common Wages—Heavy Const. (8 hr. day) (Peons)	av. per hr.	1.38	1.38
Skilled Labor Wages			
Carpenters (8 hr. day) 1 cl.	av. per hr.	2.48	2.48
Bricklayers (8 hr. day) 1 cl.	av. per hr.	2.48	2.48
Struct. Iron Workers (8 hr. day) ....Remachadores.	av. per hr.	3.77	3.77

#Struct. Steel, Shapes		Dec. '56	Jan. '57
3"-15" x 12 meters	per metric ton	2100.00#	2100.00#
# fob Monterrey			
Reinf. Steel, Corr. Rods			
¼" x 11 meters	per ton	1965.00	1965.00
⅜" x 11 meters	per ton	1965.00	1965.00
½" x 11 meters	per ton	1965.00	1965.00
⅝" x 11 meters	per ton	1965.00	1965.00
¾" x 11 meters	per ton	1965.00	1955.00
1" x 11 meters	per ton	1965.00	1965.00

Gravel truck load at 3½ cu. meters		Dec. '56	Jan. '57
Blue Gravel	per tr. load	75.00	75.00
Rose Gravel	per tr. load	73.00	73.00
Cement, Std. Port. (Tolteca)	per ton	240.00	240.00
Lumber			
1" Pine	per M ft.	1200.00	1200.00
1½" Pine	per M ft.	1500.00	1500.00

Construction Reports

Bids Asked—Low Bidders—Contracts Awarded—First Section—

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y., ELSIE EAVES, Manager
J. A. MAHONEY, M. WETZEL, L. M. FELIX, M. E. SCIORRA, F. S. DEMBEK, Reports.
J. H. WEBBER, M. R. ROESSLER, E. R. HUBER, Statistics.

NEW ENGLAND

HEAVY CONSTRUCTION—BA

Conn., Norwich BOILER—BA 2/6—State P. Wks. Dpt., 165 Capitol Ave., Hartford, Proj. BI-K-105B, boiler, Norwich State Hospital.

† **Me., Bangor** AUTOMOBILE SHOP—BA 2/15—U. S. Eng., 150 Causeway St., Boston, Mass., automobile shop, base bldg. and modifications to existing control tower, Dow Air Force Base and Hammond, ENG-19-016-57-126. $250,000-$300,000. Plans deposit $10. CD 1/14.

BUILDINGS—BA

▲ **Conn., New Haven** HIGH SCHOOL—BA 2/15—Town, Bureau Purchases, 200 Orange St., Wilbur L. Cross High School. $2,500,000. CD 3/9.

Mass., Weymouth SCHOOL—BA 2/15—Town, Elmer S. Mapes, supt. Schools, 89 Middle St., East Weymouth, Shaw School replacement, 580 Main St. $550,000. Plans deposit $50, refundable. Perry, Shaw, Hepburn & Dean, 31 St. James Ave., Boston, archts. CD 9/6, under LB.

HEAVY CONSTRUCTION—SLC

Mass., Quincy PIER—Bethlehem Steel Co., Ship Bldg. Div., 97 E. Howard St., soon lets contract Pier No. 1, shipyard, heating and electric included. $100,000.

HEAVY CONSTRUCTION—LB & CA

H. B. Collins Co., 99 Gano St., Providence, R. I. LB **$448,300**, est. $432,381. central group bldgs., Horseneck Beach, Westport, MASSACHUSETTS. Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston, Mass. Bids Jan. 15. CD 12/19.

† **S. Volpe & Co., Inc.**, 185 Devonshire St., Boston, Mass. LB **$735,200**, est. $712,200. officers club, dining hall, Otis Air Force Base, ENG-19-016-57-133, FALMOUTH, MASS. U. S. Eng., 150 Causeway St., Boston, Mass. Bids Jan. 17. CD 12/10.

BUILDINGS—LB & CA

Rossano Constr. Co., Inc., 401 Border St., East Boston, Mass. LB **$736,673**, est. $725,000. ELEMENTARY SCHOOL, Orient Heights, East Boston, BOSTON, MASS. City Dpt. School Bldgs., 26 Norman St., Boston, Mass. Bids Jan. 18. CD 1/4.

▲ **Tornabene Bros. Co.**, 170 Needham St., Newton Upper Falls, Mass. CA **$1,789,000**. SENIOR HIGH SCHOOL, Tolden Rd., ROCKLAND, MASS. Town, School Bldg. Comn., Rockland, Mass. CD 12/17, under LB.

MIDDLE ATLANTIC

BUILDINGS—BA

▲ **Md., Baltimore** SCHOOL—BA 2/6—City, Bureau Bldg. Contsr., 410 Municipal Bldg., Zone 2, 2 story, masonry Lemmel Junior High School, Dukelan St., $2,900,000. Plans deposit $50, Eugene Adams & Rigg, 2513 N. Charles St., Zone 18, archts. CD 11/9.

▲ **N. J., Mount Holly** OFFICE—BA 2/7—Bd. Freeholders Burlington Co., Mount Holly, office bldg. $1,983,472. Micklewright, Mountford & Petty & Croft, Stuyvesant and Prospect Sts., Trenton, archts. CD 9/24, under LB.

Del., Marshalltown GARAGE, etc.—BA 2/15—New Castle Co. Levy Court, County Office Bldg., Wilmington, garage, maintenance and storage building, paving. $175,000. W. Ellis Preston, 903 Jefferson St., Wilmington, archt.-engr.

▲ **N. Y., Plattsburgh** HOUSING—BA 2/20—Base Procurement Office, Plattsburgh Air Force Base, construct and finance 1,685 housing units, Armed Services Housing Proj. (Capehart), Inv. 36-636-57-36, $27,802,000. Kelly & Gruzen, 80 Fifth Ave., New York, Zone 11, archts. CD 12/21.

Del., Lewes SCHOOL—BA 2/27—Lewes Del. Special School Dist., Lewes, high school addn. and also elementary school addn. $900,000. Pope & Kruse, 911 Washington St., Wilmington, archts. William E. Carew, Jr., 911 Washington St., Wilmington, engr. CD 2/28.

HEAVY CONSTRUCTION—LB & CA

Edenwald Contg. Co., 151-45 Sixth Rd., Whitestone, N. Y. LB **$172,256(A), $173,576(B)** (7 bidders) reconstr. playground between W. 139 and W. 151 Sts., west of St. Nicholas Ave. in St. Nicholas Park, Manhattan Boro. Contr. M-77-156, NEW YORK, N. Y. Comr. Parks, Dpt. Parks, Arsenal Bldg., Central Park, 64 St. and Fifth Ave., New York 21, N. Y. Bids Jan. 17. CD 1/9.

▲ **Delphi Constr. Co., Inc.**, 500 Zerega Ave., New York 61, N. Y. CA **$1,276,800**. Contr. No. 870, municipal refuse incinerator, WHITE PLAINS, N. Y. City, Dpt. P. Wks., 255 Main St., White Plains, N. Y. CD 12/27, under LB.

▲ **PENNSYLVANIA**—State Hy. Dpt., 506 N. Office Bldg., Harrisburg,

Pa.—**Kingston Contg. Co., Inc.**, West Point, Pa. CA **$1,056,562**. divided hy., rein.-con. 1.93 mi., 3 bridges, in the city of Allentown and vicinity, L.R. 158, Lehigh Co.;

Pa.—**John H. Swanger, Inc.**, Lancaster, Pa. CA **$2,198,453**, constr. 2.46 mi. Traffic Route 441 from a point in Columbia Boro, northwest, constr. bridge over Chickies Creek, T.R. 441, Lancaster Co. CD 1/8, under LB.

▲ **PENNSYLVANIA**—State Hy. Dpt., 506 N. Office Bldg., Harrisburg,

Pa.—**Dinardo, Inc.**, 331 Bouquet St., Pittsburgh, Pa. CA **$1,134,713**. 2.02 mi. city of Pittsburgh and boro of Millvale, T. R. 8 and 28, Allegheny Co.;

Pa.—**J. Paul Laubach**, Box 68, Benton, Pa. CA **$847,141**. crushed aggregate base with bit. surf., 3 rein.-con. culverts, widen existing pavement, 5 prestressed precast rein.-con. bridges, 5.39 mi. from Jobs Corners north, T. R. 549, Tioga and Bradford Counties;

Pa.—**H. J. Williams Co., Inc.**, 150 S. Sumner St., York, Pa. CA **$3,028,298**. divided hy. 3 culverts, one plate girder bridge, one rein.-con. and 3 I-beam bridges, intersecting twp. roads and ramps with flexible-type pavement, I-beam bridge Sect. 1A between Hametown and Pa.-Md. State Line, 7.36 mi., T. R. 111, York Co. CA **$3,082,528**. divided hy. same type as Sect. 1A 6.44 mi., five rein.-con. boxes and two concrete arches, two I-beam bridges, T-beam and 1 girder bridge, from near Loganville south to near Hametown, T. R. 111, York Co. Grand total $8,092,680. CD 1/8, under LB.

PENNSYLVANIA—State Hy. Dpt., 506 N. Office Bldg., Harrisburg,

Tri-County Constructors, 2920 Mt. Carmel Ave., North Hills, Pa. CA **$869,965**. flexible base with bit. surf., rein.-con. retaining walls, prestressed, precast concrete bridge deck 3.67 mi. from Northampton-Bucks Co. line south to near the Durham-Nockamixon Twp. Line, T. R. 32 and U. S. Rte. 611, Bucks Co. CD 12/28, under LB.

▲ † **Elmhurst Contg. Co., Inc.**, 53-09 97 Place, Corona, N. Y. CA **$2,103,054**. constr. second unit of Bradford Flood Protection Proj. at Tunungwant Creek, Bradford, CIVENG-36-058-57-35, PENNSYLVANIA. U. S. Eng., 925 New Federal Bldg., Pittsburgh 19, Pa. CD 8/18/55.

▲ **MARYLAND**—State Rds. Comn., 103 E. Lexington St., Baltimore, Zone 2,

Md.—**M. J. Grove Lime Co.**, Lime Kiln, Md. LB **$1,242,024** (6 bidders) relocation, surf. 6.25 mi. State Rte. 418 and 64, Leiterburg and Ringgold, Contr. W 442-1-620, Washington Co.;

Md.—**Geo. E. Fox & Co.**, 5717 Harford Rd., Baltimore 14, Md. LB **$975,340** (6 bidders) relocation, surf. 5.481 mi. State Rte. 152 Rutledge toward Fallston, Contr. H 360-2-420, Harford Co.;

Md.—**C. H. Lawson, Inc.**, Williamsburg, Va. LB **$554,518** (4 bidders) surf. 4.02 mi. State Rte. 224, near Mason Springs, Contr. CH 297-2-520, Charles Co. Bids Jan. 15. CD 1/4.

BUILDINGS—LB & CA

▲ **Brady Constr. Co., Inc.**, 605 W. 47 St., New York 19, N. Y. LB **$2,436,000**. (8 bidders) general constr. JUNIOR HIGH SCHOOL 180, Seaside Ave. between Beach Channel Dr. and Rockaway Freeway, Queens Boro, NEW YORK. Director, Bureau Constr., 42-15 Crescent St., Long Island City 1, N. Y. Bids Jan. 16. CD 1/11.

Dierks Heating Co., 43-32 33 St., Long Island City, N. Y. LB **$346,925**. (6 bidders) heating work (New York);

Dropkin Bros., Inc., 149 Broadway, Brooklyn 11, N. Y. LB **$345,600**. (10 bidders) electrical work (New York);

Industrial Engineering Co., 50 Church St., New York 7, N. Y. CA Est. **$500,000**. 1 story BOTTLING PLANT, 1892-1914 Linden Blvd., BROOKLYN, N. Y. Harry Malter, 111 Broadway, New York 6, N. Y. CD 4/27.

J. Baranello & Sons, 95-16 101 St., Ozone Park, N. Y. CA Est. **$850,000**. 1 story CHURCH, 733-53 Linwood St. 2 story school and convent, 656-80 Essex St., BROOKLYN, N. Y. St. Gabriel's R. C. Church, 733 Linwood St., Brooklyn 8, N. Y. CD 2/9.

▲ **Wilaka Constr. Co., Inc.**, 11 E. 44 St., New York 17, N. Y. LB **$2,393,000** (7 bidders) general constr. JUNIOR HIGH SCHOOL 149, Willis Ave. between 144 and 145 Sts., NEW YORK, N. Y. Director, Bureau Constr., 42-15 Crescent St., Long Island City 1, N. Y. Bids Jan. 18. CD 12/27;

Dierks Heating Co., 43-32 33 St., Long Island City, N. Y. LB **$344,144** (4 bidders) heating work (New York, N. Y.);

Meyerbank Electric Co., 126 W. 32 St., New York 1, N. Y. LB **$372,500** (7 bidders) electrical work (New York, N. Y.).

Holger Olson, 512 Newbridge Rd., East Meadow, L. I., N. Y. CA **$640,000**. Phelps Lane Elementary SCHOOL, NORTH BABYLON, N. Y. Bd. Educ., Union Free School Dist. No. 3, town of Babylon, Weeks Rd., School, North Babylon, N. Y. Bids Dec. 12.

Pro-Val Builders, Orange National Bank Bldg., Orange, N. J., Owner Builds, **$600,000**. 22 HOMES to be known as The Oakes in Elberon Park Section (Highland Ave.), ELBERON, N. J. Erwin Gerber, 11 Commerce St., Newark, N. J., archt.

Washington Constr. Co., 198 Washington Place, Passaic, N. J., CA Est. **$350,000**. OFFICE BLDG., site of Old Benedictine Academy, Broadway and Graham Ave., PATERSON, N. J. Blue Chip Leases, Inc., 198 Washington Pl., Passaic, N. J. Edward Bowser, 41 Oak St., Orange, N. J., archt.

Brisby Builders, c/o Geo. Boylan, River Rd. and Rt. 24, New Brunswick, N. J. Owner Builds, **$750,000**. 32 HOMES, Washington Valley Rd. known as East Brook Park, BRIDGEWATER TWP., SOMERVILLE P. O., N. J.

Albert A. Chmiel, 751 Bunker Hill Ave., Trenton, N. J., Separate Contracts, **$380,000**. 19-unit RESIDENTIAL DEVELOPMENT, Princeton Pike, etc., TRENTON, N. J.

▲ **Copperfield, Inc.**, Edwin E. Ketay, pres., Larkfield Rd., East Northport, Long Island, N. Y., Separate Contracts, **$4,080,000**. RESIDENTIAL DEVELOPMENT, White Horse Circle Area, WHITE HORSE, N. J.

▲ **McHenry Builders**, 6501 Ditman St., Phila., Pa. Separate Contracts. **$2,000,000**. RESIDENTIAL DEVELOPMENT, 130 units, Second St. Pike, BETHAYRES, PA.

▲ **Northampton Hills, Raff & Ferguson**, 2318 Huntingdon Pike, Bethayres, Pa. Separate Contracts. **$3,000,000**. RESIDENTIAL DEVELOPMENT, 142 units, Second St. Pike, BETHAYRES, PA.

Raymond S. Elliott, Pottstown, Pa. Separate Contracts **$344,000**. RESIDENTIAL DEVELOPMENT, Amity Twp. Rte. 663, DOUGLASVILLE, PA.

Gorchov Bros., 55 N. 52 St., Phila., Pa. Separate Contracts. **$722,500**. RESIDENTIAL DEVELOPMENT, 19 units, Hagysford Rd., GLADWYNNE, PA.

▲ **D. S. Warfel Assocs.**, 440 N. Prince St., Lancaster, Pa. LB **$1,350,978**. general contract SENIOR HIGH SCHOOL, Neffsville, LANCASTER, PA. Manheim Twp. School Auth., 114 W. Ross St., Lancaster, Pa. Ross W. Singleton, 53 N. Duke St., Lancaster, Pa., archt.-engr.

▲ **Auckland Ofterding & Auckland**, Trevose, Pa. CA **$1,000,000**. RESIDENTIAL DEVELOPMENT, 85 units, Farmway Dr., NEW BRITAIN, PA. Richboro Manor Homes, Att. John Leidy, New Britain, Pa.

PROJECTS COVERED

By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $44,000; other public works $73,000; industrial buildings $93,000; other buildings $344,000. Also Foreign projects of $100,000 and more in size of interest to American contractors.

By Regions & Classes of Construction

(In order of Listing)

BIDS ASKED
LOW BIDDERS
CONTRACTS AWARDED

New England
Middle Atlantic
South
Middle West
West of Mississippi
Far West

PROPOSED WORK
Water Supply
Sewers, Waste Disposal
Bridges
Streets & Roads
Earthwork, Waterways
Public Buildings
Mass Housing
Commercial Buildings
Industrial Buildings
Unclassified

In These Stages

PROPOSED WORK: Before and including appointment of engineers or architects.

BIDS ASKED: BA (new announcements only). For full calendar, see also preceding issues.

SOON LETS CONTRACT: SLC

LOW BIDDERS: LB On jobs below $500,000 in value all low bidder news will be the final reports published on the projects involved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: CA Except awards to low bidders previously reported in low bidder stage.

CD dates shown are of Construction Daily Issue in which last previous report was published.

OWNERS, ENGINEERS, ARCHITECTS, CONTRACTORS are invited to report their new jobs for listing in these reports when they meet or exceed the size minimums shown above. Address these news releases to J. A. Mahoney, REPORTS, ENGINEERING NEWS-RECORD, 330 W. 42 St., New York 36, N. Y.

Symbols and Abbreviations Include:

†	Federal Government
▲	Project of $1,000,000 or over.
ENR	Engineering News-Record
CD	Construction Daily

For additional reports see Construction Daily.

Barclay White & Co., 3337 Market St., Phila., Pa. CA **$400,000.** 1 story, brick 65,000 sq. ft. OFFICE and Holiday Bldg., PHILA., PA. Wilcox-Walter-Furlong Paper Co., 32 and Race Sts., Phila., Pa. Wilkenson & Pepper, 204 W. Rittenhouse Square, Phila., Pa., archts. I. S. Towsley, 1428 S. Penn Square, Phila., Pa., engr.

▲ **Irwin & Leighton**, 1505 Race St., Phila., Pa. LB **$1,449,000.** bachelor officers' quarters and mess hall, NBy 8864, PHILA., PA. Dpt. Navy, Phila. Naval Base, Phila., Pa. [Vincent G. Kling, 917 Corinthian Ave., Phila., Pa., archt. Severud Elstad & Krueger, 415 Lexington Ave., New York, N. Y., engrs.

Aldon Chernitky, 3402 Shelmire Ave., Phila., Pa. Separate Contracts. **$754,000.** RESIDENTIAL DEVELOPMENT, 58 units, Bustleton Pike, RICHBORO, PA.

Washington Engineering & Constr. Co., Sharon, Pa. CA **$624,550.** general contract HOSPITAL addn., SHARON, PA. Sharon General Hospital, 740 E. State St., Sharon, Pa. Awarded Jan. 11. CD 4/20.

▲ **Joseph Barness & Son**, Willow Grove Pike, Warrington, Pa. Separate Contracts. **$5,865,000.** RESIDENTIAL DEVELOPMENT, 391 units, York and Bristol Rds., WARRINGTON, PA.

▲ **Edith-Friedman**, 520 Moreland Rd., Huntingdon Valley, Pa. Separate Contracts. **$7,000,000.** RESIDENTIAL DEVELOPMENT, 471 units, Street and Valley Rds., WARRINGTON, PA.

Burns Development Co., 217 Cornwall Ave., Trenton, N. J. Separate Contracts. **$990,000.** RESIDENTIAL DEVELOPMENT, Rickerts Tract, YARDLEY, PA. Frank B. Spiezie, 1463 Edgewood Ave., Trenton, N. J., archt.

SOUTH

HEAVY CONSTRUCTION—BA

† **La., Lake Charles**—RADIO AND RADAR FACILITIES—BA 2/18—U. S. Govt., Kelly Air Force Base, San Antonio, Tex., and Directorate of Procurement & Production SAAMA, fixed radio and radar facilities, incl. tower extens. and footings. $100,000.

BUILDINGS—BA

Fla., Gainesville—DORMITORY—BA 2/6—State Bd. Control, Admin. Bldg., University of Fla., Men's Dormitory Units A&B, 4 story, 109x308 ft. Unit C, 2 story, 54x105 ft. Unit D, 2 story, 63x126 ft. Units E & F, 3 story, 109x308 ft., str. tile and brick, air-conditioned. Plans deposit $60, limit 2 sets. Guy C. Fulton, Bldg. E., Univ. of Fla., archt. J. M. Hamilton, Univ. of Fla., consult. archt. Ebaugh & Goethe, 205 N.W. 10th Ave., engrs.

Fla., Miami—SCHOOL—BA 2/6—Dade Co. Bd. P. Instruction, School Admin. Bldg., 275 N.W. 2 St., Buche Park Junior Senior High School. Plans deposit $50. Extended date. Polevitsky, Johnson & Assocs., 250 N. E. 18 St., Miami, archts. CD 11/21.

Fla., Titusville—SCHOOL—BA 2/12—Bd. Public Instruction, Titusville; Junior High School, Eau Gallie. Plans deposit $45, $35 addnl. sets. Griffin & Gomon, Box 1671, Daytona Beach, archts. CD 1/11.

Fla., St. Petersburg—OFFICE—Bids Asked—Peninsular Telephone Co., 828 Arlington Ave. N. (selected list of bidders) 4 story, steel, concrete office bldg. Eliot C. Fletcher, 404 Marion St., Tampa, archt.

BUILDINGS—SLC

N. C., Wilmington—MILL—Industrial Properties Comn., Wilmington, soon lets contract, 64,000 sq. ft. hosiery mill. $500,000. Plans deposit $50. Altobelli & Assocs., 3608 Oleander Dr., archts.

HEAVY CONSTRUCTION—LB & CA

E. L. Daniels, 1511 N. Quincy St., Arlington, Va., LB **$499,649**, Item 1; LB **$493,649**, Item 2, constr. Mt. Vernon Ave.-Arlington Ridge Rd., Bridge and Old Glebe Rd. Bridge and approaches, ARLINGTON, VA. Purch. Agent, Arlington Co., Court House, Arlington, Va. Bids Jan. 15. CD 12/12.

▲† **Williams Paving Co., Inc.**, 1269 E. Princess Ann Rd., Norfolk, Va., LB **$1,808,864** Base Bid (3 bidders) runway exten., ENG-44-110-57-13, LANGLEY AIR FORCE BASE, VA. U. S. Eng., foot of Front St., Norfolk, Zone 1, Va. Bids Jan. 17. CD 12/20.

† **Pittsburgh-Des Moines Steel Co.**, Neville Island, Pittsburgh, Pa., LB **$137,980** (4 bidders) 600,000 gal. elevated Water Storage Tank No. 125, Veterans Admin. Hospital, ROANOKE, VA. Veterans Admin., Munitions Bldg., Wash., D. C. Bids Jan. 15. CD 11/26.

T. L. Dysard & Son, Statesville, N. C. LB **$248,359.** REA Proj. 531A, telephone lines, Brunswick Co., NORTH CAROLINA. Atlantic Telephone Membership Corp., Shallotte, N. C. L. E. Wooten & Co., 306 S. Dawson St., Raleigh, N. C., engrs. Bids Jan. 4. CD 11/25/55.

Crowder Constr. Co., Inc., 1123 E. 10 St., Charlotte, N. C. CA **$122,337.** wid'n. Central Ave. and Tuckaseegee Rd., CHARLOTTE, N. C. City, City Hall, Charlotte, N. C. Bids Jan. 7. CD 1/18.

Kahn & Jackson, Inc., 1113 Blossom St., Columbia, S. C. LB **$297,135.** Proj. 1357, Northside Water Distr. Sys., GASTONIA, N. C. City, Gastonia, N. C. Bids Jan. 3. CD 12/21/54.

† **J. E. Milam Constr. Co.**, 8940 First Ave. S., Birmingham, Ala., LB **$262,862**, road for OST facilities, Santa Rosa Island, ENG-01-076-57-45, EGLIN AIR FORCE BASE, FLA. U. S. Eng., 2301 Grant St., Mobile 7, Ala. Bids Jan. 8. CD 12/5.

▲ **Heyl & Patterson, Inc.**, 55 Fort Pitt Blvd., Pittsburgh, Pa., LB **$967,600** (only bidder) loading and unloading tower at bulk handling plant, Alabama State Docks Dpt., MOBILE, ALA. Alabama State Docks Dpt., Alabama State Docks Dpt. Office Bldg., Mobile, Ala. Bids Jan. 15. CD 11/28.

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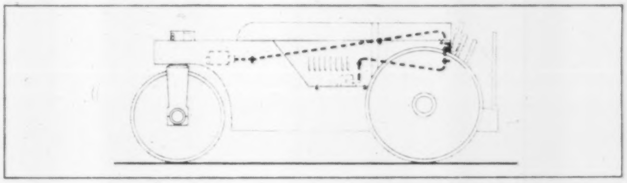
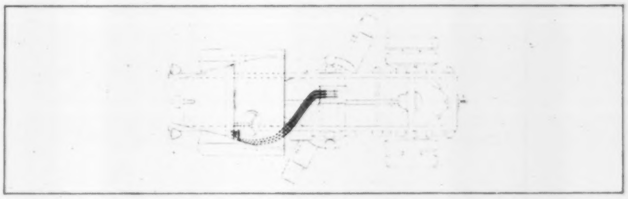
give trouble-free, lifetime service for remote control of construction and quarrying equipment

Operators of Construction or Quarrying Equipment can be certain of maintenance-free service from TRU-LAY PUSH-PULL CONTROLS because of their precision manufacture—rugged construction—lubrication for life of the inner, working member at the factory—complete sealing of the entire unit (a vitally important factor in tough, outdoor operations) against dust, dirt or moisture.

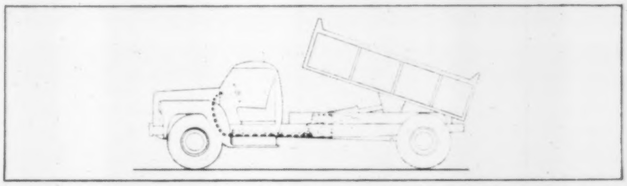
We have never heard of a TRU-LAY FLEXIBLE PUSH-PULL CONTROL *wearing out in normal service.* Examples of heavy-duty applications are shown below. Users of such equipment benefit from simplified equipment design and improved operation.



- Shown here is a tandem roller where two different PUSH-PULL cables are used to facilitate operation. One cable, 156″ long, is capable of a 2″ stroke to operate the hydraulic steering valve at the front of roller. The second, shorter cable operates tail shaft governor which keeps roller speed constant, upgrade or down.



- More room in the cab of this snow plow was one of the advantages of installing PUSH-PULL cables. This permitted the hydraulic valve to be located at a more convenient point in the chassis. "There are so many things you can do with these flexible cables compared to the old fixed installations," the manufacturer told us.



- Raising and lowering of the dump body on a famous line of hydraulic dump trucks is via TRU-LAY PUSH-PULL cables. With PUSH-PULLS this merely entails the pulling of a button on the dash. The installation did away with cut-up floor boards and levers in the truck cab. TRU-LAY PUSH-PULLS brought easier installation, more convenience and less maintenance.

***Look for PUSH-PULLS** on the heavy equipment you buy. It will be easier to operate and less costly to maintain. For complete information we'll be glad to send you this **DATA FILE** . . .*

ACCO

TRADE MARK

A C C

Push-Pull DATA FILE

AUTOMOTIVE and AIRCRAFT DIVISION
AMERICAN CHAIN & CABLE

601-F Stephenson Bldg., Detroit 2
2216-F South Garfield Ave., Los Angeles 22 • 929-F Connecticut Ave., Bridgeport 2, Conn.

▲ **LOUISIANA** South Louisiana Turnpike Comm. 7304 Chetimaches St., Donaldsonville, cancelled bids to have been opened Jan. 16, constr. roadways, floodway, trestle sub-structures for Bayou Teche, West Levee Lake Rd., Chicot Pass, East and Mississippi River bridges, minor bridges and overpass, interchange structures for Acadian Thruway, Donaldsonville. CD 11/20.

James P. Cross, Box 827, New Iberia, La. CA **$158,995**. excav., clearing and grubbing, LIVINGSTON, LA. Livingston Parish Police Jury, Livingston, La. Bids Dec. 20. CD 12/3.

BUILDINGS—LB & CA

Trammel Constr. Co., Bristol, Tenn., LB **$595,500**, with 4½% interest rate, lease-purchase project, POST OFFICE COURT HOUSE, ABINGDON, VA. General Services Admin., General Services Bldg., Wash. 25, D. C. Bids Dec. 20. CD 12/27, under LB (Low Bid incomplete).

▲ **J. W. Bateson Co., Inc.**, Box 725, Fort Eustis, Va., CA **$2,174,500**. construct and finance 150 Capehart Family HOUSING UNITS, ENG-44-110-57-1, FORT STORY, VA. U. S. Eng., foot of Front St., Norfolk, Va. Bids Dec. 12. CD 12/17, under LB.

▲ **Nielsen Constr. Co.**, Harrisonburg, Va., CA **$1,187,404**, DORMITORIES Nos. 33 and 39, HARRISONBURG, VA. Madison College, Harrisonburg, Va. Bids Dec. 11. CD 12/19, under LB.

▲ **John P. Pettyjohn & Co.**, 212 8th St., Lynchburg, Va. CA Est. **$569,000**, 1 story, brick, steel, concrete Central OFFICE BLDG., Robbins Corner; CA Est. **$800,000**, 1 story, brick, steel, concrete Central OFFICE BLDG. Chinese Corner, near NORFOLK, VA. Chesapeake & Potomac Telephone Co., 120 W. Bute St., Norfolk 10, Va. CD 12/21.

▲ **General Services Admin., P. Bldg. Service**, Peachtree-Seventh Bldg., Atlanta, Ga., rejected bids Dec. 28, lease-purchase project, communicable DISEASE CENTER, incl. 6 buildings near Emory University Campus, ATLANTA, GA. LB **$12,178,620**. CD 12/2, under LB.

MIDDLE WEST

HEAVY CONSTRUCTION—BA

▲ **ILLINOIS** BA 2/7—State Toll Hy. Comm., 20 N. Wacker Dr., Chicago,

Cook Co. Cont. T-7-A, grading, drainage, paving, precast concrete and steel bridges 4.75 mi. at Mt. Prospect. $4,000,000. Naess & Murphy, 80 E. Jackson Blvd., Chicago, sec. engr. CD 5/11.

▲ **ILLINOIS** BA 2/14—State Toll Hy. Comm., 20 N. Wacker Dr., Chicago,

Boone Co.—Sect. N-3B, 6.12 mi. North Illinois strip southern part of county, approx. from Town Hall Rd. to Markley Road south of Belvidere, incl. "trumpet" interchange at Genoa Rd. and eight pre-stressed concrete bridges to carry Stone Quarry, Cohoon, Genoa, Gould School and Markley Rds., Pearl St. and an interchange ramp over the tollway and the tollway over Mosquito Creek. Gannett, Fleming, Corddry & Carpenter, Inc., 600 N. 2 St., Harrisburg, Pa., designing engr.

DuPage Co.—Sect. E-2A, 7.93 mi. east-west segment, extend approx. from ½ mi. east of Naperville Rd. northwest of Lisle to Cermak-Midwest Rd. intersection southwest of Elmhurst, incl. half-cloverleaf interchange at Ill. Rte. 53 and Warrenville Rd. north of Lisle, two access ramps at Highland Ave. north of Downers Grove, steel bridge over Rte. 53, and six pre-stressed concrete bridges, pre-stressed concrete structures will carry Lacey Rd., Highland Ave. and Meyers Rd. over tollway and the tollway over Yackley Ave., Warrenville Rd. and DuPage River. Hurst & Rosche, Inc., Hillsboro, Ill., designing engr. under Joseph K. Knoerle & Assocs., Inc., 155 N. Wacker Dr., Chicago, Ill., consult. engr. to comm. CD 5/11.

▲ **Ill., Chicago** SUBWAY BA 2/7—City, City Hall, station bldgs., comp. wt. platforms, canopies, ramps, also pumping and elec. in median of Congress Expressway between Lavergne Ave. and Halsted St. $1,500,000.

BUILDINGS—BA

▲ **Mich., Pontiac** SCHOOLS—BA 2/6—Bd. Educ., Pontiac School Dist., 40 Patterson St., addns. to Bethune Elementary School, Malkim Elementary School, Herrington Hills Elementary School, Kennett Road Elementary School. $1,250,000. Plans deposit $25 each for general, mechanical and electrical work. H. E. Beyster & Assoc., Inc., 700 Griswold Bldg., Detroit Zone 26, archt. CD 8/13.

▲ **O., Fremont** HIGH SCHOOL—BA After 2/14—Bd. Edu., Fremont, high school. $1,800,000. McLaughlin & Keil, 500 Dominion Bldg., Lima, archts. CD 9/13.

▲ **O., Sharonville** HIGH SCHOOL—BA 3/7—Princeton Local School Dist., 336 Reading Rd., high school, Sharon and Chester Rds. $3,500,000. Plans deposit $100. Potter, Tyler, Martin & Roth, 128 E. 6 St., Cincinnati, archts. Fosdick & Hilmer, Union Trust Bldg., Cincinnati, engrs. CD 6/14.

▲ **O., Columbus** HOUSING—BA About 4/1—Procurement Office, Lockbourne Air Force Base, Columbus, construct and finance 400-unit Capehart Housing. $6,500,000. Inschd, Brand & Inscho, 60 E. Broad St., archts. CD 4/24.

HEAVY CONSTRUCTION—LB & CA

▲ **Hunkin-Conkey Constr. Co.**, 1740 E. 12 St., Cleveland 14, O., LB **$3,827,000** (1 bidder) Contr. C1, general constr. pump bldg., Clague Rd. filtration plant, CLEVELAND, O. City, Dpt. P. Utilities, Emil J. Crown, dir., City Hall, Cleveland 14, O. Bids Jan. 18. CD 1/2.

Spohn Heating & Ventilating Co., 1775 E. 45 St., Cleveland, O. LB **$118,543**, Contr. C-2 and C-2, heating and ventilating (Cleveland, O.);

Doan Electric Co., 725 Hamilton Ave., Cleveland, O. LB **$572,400**, Contr. C-4, electrical work (Cleveland, O.).

▲ **Don King Constr. Co.**, Jackson, O. CA Total est. **$1,793,000**. sewage treatment plant and pumping station in sewerage project, Buckeye Lake, LANCASTER, O. Comrs. Fairfield Co., Lancaster, O. Jennings-Lawrence Co., 1392 King Ave., Columbus, O., engrs. CD 8/26/55;

Christopher Constr. Co., 546 N. Fourth St., Columbus, O., CA 6-mi. 18- to 24-in. trunk sewer (Lancaster, O.); **Bowman & Howard Co.**, New Rome, O., and **Krebs-Hockinson Co.**, Newark, O., and **R. P. Cafferty Co.**, Springfield, O., CA lateral sewer lines (Lancaster, O.).

INDIANA State Hy. Dpt., State House Annex, Indianapolis,

Ind. **Berns Constr. Co.**, 312 W. Washington St., Indianapolis, Ind., LB **$127,395**, est. $144,228 bit. coated aggreg. surf. 1.017 mi. Contr. No. R 4102, Proj. S 340 (2), Spencer Co.;

Ind. **McMahan Constr. Co.**, Rochester, Ind., LB **$187,878**, est. $197,632 c. conc. 0.599 mi. Rd. No. 59, Contr. No. R-4102, Proj. S-98 (2), Knox Co. Bids Jan. 15. CD 1/7.

▲ **ILLINOIS** State Toll Hy. Comm., 20 N. Wacker Dr., Chicago, Zone 6,

American Bridge Div., U. S. Steel Corp., 208 S. LaSalle St., Chicago, Ill., LB **$1,313,227**, furnish, fabrication, shop painting and delivery of 6,211,600 lb. (3105.8 tons) structural steel girders and beams to be used on six bridges. Bids Jan. 17.

▲ **ILLINOIS** State Toll Hy. Comm. 20 N. Wacker Dr., Chicago, Zone 6,

ITHC **John C. Peterson Constr. Co.**, 958 Church St., Baldwin, N. Y., LB **$1,670,398** (9 bidders) Sect. N-1C, 3.07 mi. grading, drainage, paving, from Station 745 ext. to Station 906 incl. concrete bridges and steel beam stringer bridge, west of Rockford, Winnebago Co. Rochester & Goodell Engineers, Inc., Salem, Ill., and Harry A. Balke, 2330 Victory Parkway, Cincinnati, O., designing engrs.

ITHC—**Charles Ind. Co.**, Point Ave., Rockford, Ill., LB **$2,713,818** (9 bidders) Sect. N-3A, grading, drainage, paving 4.03 mi. from Station 400 to Station 613, incl. precast concrete and struc. bridges near Belvidere, Winnebago Co., Gannett, Fleming, Corddry & Carpenter, Inc., 600 N. 2 St., Harrisburg, Pa., design. engrs. Joseph K. Knorrle & Assocs., Inc., 155 N. Wacker Dr., Chicago, Ill., consult. engrs. to comm. Bids Jan. 17. CD 12/31.

▲ **MICHIGAN**—State Hy. Dpt., Steven T. Mason Bldg., Lansing,

Mich. **Wenton Constr. Co.**, 20415 Mack Ave., Grosse Pointe, Mich. and **Sugden & Sivier, Inc.**, 13120 Cloverdale St., Oak Park, Mich. LB **$831,802**, est. $910,000 (23 bidders) 22 ft. dual concrete 1 bridge 2.007 mi. on relocation US-127 from Morrill Rd. north to north of Van Horn Rd., BM 38131 C2-RN (38-65), etc., Jackson Co.;

Mich. **L. A. Davidson Co.**, 213 East St. Joseph St., Lansing, Mich. LB **$1,197,117**, est. $1,340,000 (18 bidders) 22 ft. dual concrete 2.808 mi., two bridges on relocation US-127, BM 38131 C1-RN (38-65), etc., Jackson Co.; LB **$1,612,728**, est. $1,720,000 (16 bidders) dual conc. pave 1.948 mi. on US-23 from north of Hill Rd. to north of M-121, 0.371 mi. on M-121 from east of US-23 relocation, BI 25031 C1-RO (SP 25-53, etc., Genesee Co.;

Mich.—**Cooke Contg. Co.**, 1116 Penobscot Bldg., Detroit, Mich. LB **$656,926**, est. $670,000 (13 bidders) dual concrete 1.343 mi. one way streets, bridge approach on relocation of M-20 from Madison St. to Euclid Ave. U 09032 C2-U (SP 9-48), etc., Bay Co.; LB **$145,236**, est. $170,000 (11 bidders) c. conc., b. conc. 2.95 mi. on M-53 from M-59 to 17 Mile Rd., F 50011 C1-R (SP 50-37), etc., Macomb Co.;

Mich. **Hertel-Deyo Co.**, 5205 Division St. S., Grand Rapids, Mich. LB **$445,682**, est. $500,000 (14 bidders) 22 ft. dual concrete 1.091 mi. on M-21 from Ada Dr. southeast in Ada Twp., F 41043 C1-R (SP 41-10), F 185-15, Kent Co.;

Mich.—**Rieth-Riley Constr., Inc.**, 837 Emmett St., Battle Creek, Mich. LB **$159,747**, est. $190,000 (11 bidders) b. conc. 8.613 mi. on M-43 M 08012 C2-R (1-47), etc., Barry Co. Bids Jan. 9. CD 12/31.

▲ **MICHIGAN**—State Hy. Dpt., Stevens T. Mason Bldg., Lansing,

Mich. **Boone & Boone, Inc.**, Traverse City, Mich. LB **$168,950**, est. $170,000 (10 bidders) rein.-con., steel bridge on relocation of M-72 over south branch of Au Sable River 1.39 mi. east of Gratling, MB1 of 20-6 22 C1-R (20022), Crawford Co.;

Mich. **Joseph Plozai, Inc.**, 7304 Michigan Ave., Detroit, Mich. LB **$196,935**, est. $210,000 (10 bidders) rein.-con., steel bridge on relocation US-12 over US-131, 1.7 mi. south of Kalamazoo, BI B1 of 39-10-8 Un, I 02-3 3, Kalamazoo Co.;

Mich.—**Johnson-Greene Co.**, 416 E. Huron St., Ann Arbor, Mich. LB **$275,129**, est. $340,000 (13 bidders) remove existing bridge and build new rein.-conc. steel bridge on relocation of M-61 over Tittabawassee River, 6.5 mi. of Gladwin, SS B1 of 26-10-20 C2-R (S 82 9), Gladwin Co.; LB **$274,783**, est. $290,000, rein.-con., steel bridge relocation of US-13 over Manistee River 5.7 mi. north of Manton, F B1 of 83-11-11 C1-R (F 133 13), (83032), Wexford Co.;

Mich. **L. A. Davison Co.**, 213 E. St. Joseph St., Lansing, Mich. LB **$156,338**, est. $170,000 (5 bidders) rein.-con., steel underpass railroad grade separation structure Grand Trunk R.R. over US-23 also pumphouse and equip., temporary R.R. runaround tracks, BIN X2 of 25-7-4 C2-20 (BIN 87-2 4), Genesee Co.; LB **$490,145**, est. $580,000 (9 bidders) rein.-con. steel grade crossing structure and approaches on Belleville Rd. over US-12 ½ mi. north of Belleville, I B2 of 82-21-6 C1-RN, etc., Wayne Co. Bids Jan. 9. CD 12/31.

BUILDINGS—LB & CA

▲ **Huber, Hunt & Nichols, Inc.**, 2450 S. Tibbs St., Indianapolis, Ind., CA **$3,019,000**. general contract HUMANITIES and SOCIAL SCIENCE BLDG., Indiana University, BLOOMINGTON, IND. Indiana University, Admin. Bldg., Bloomington, Ind. Bids Nov. 27. CD 12/5, under LB.

▲ **Amoco Chemicals Corp.**, 910 S. Michigan Ave., Chicago 5, Ill. CA **$10,000,000**. CHEMICAL PLANT in midwest applying new process for production of phthalic anhydride, isophthalic acid, terephtalic acid, dimethyl terephthalate, dimethyl isophthalic and benzoic acid, HAMMOND, IND. Standard Oil Co. of Ind., 910 S. Michigan Ave., Chicago 5, Ill.

LaSalle Constr. Co., 343 S. Dearborn St., Chicago, Ill., CA **$650,000**. PLANT EXPANSION, CHICAGO, ILL. Johns-Manville Corp., 22 E. 40th St., New York, N. Y. CD 11/21.

▲ **Trans American Constr. Co.**, 5232 Sheridan Rd., Chicago, Ill., CA **$2,750,000**. 230 unit MOTEL, 95th and Stony Island Ave., CHICAGO, ILL. M. L. Anixter, 79 W. Monroe St., Chicago, Ill. Frank LaPasso, 8 S. Dearborn St., Chicago, Ill., archt.

▲ **S. M. Wilson & Co.**, 1616 Cleveland Ave., Granite City, Ill. CA Est. **$1,100,000**. waste water treatment plant at REFINERY, adjacent to Mississippi River, WOOD RIVER, ILL. Shell Oil Co., Inc., c/o Wood River Refinery, H. D. Dale, mgr., Wood River, Ill. CD 2/8.

R. C. Hendrick & Son., 427 Atwater St., Saginaw, Mich. CA **$595,800**. general constr. Cook and Longview Elementary SCHOOL addns., MIDLAND, MICH. City, Bd. Educ., R. W. Caldwell, secy, Midland, Mich. CD 12/13, under LB.

J. W. Warswick Co., Oak Park, Mich. CA Est. **$450,000**. CHURCH and SCHOOL addn. OAK PARK, MICH. Our Lady of Fatima Parish, 24000 Coolidge Rd., Oak Park, Mich. Bids Dec. 4. CD 11/29.

Ferguson & Philip, Dearborn, Mich. LB **$528,028**. ELEMENTARY SCHOOL, Helen St., Ecorse, WYANDOTTE, MICH. School Dist. No. 8, Ecorse Twp., 15010 McCann St., Wyandotte, Mich. Bids Jan. 7. CD 12/17.

WEST OF MISSISSIPPI

HEAVY CONSTRUCTION—BA

Okla., Oklahoma City BA 2/5—City, City Hall, Contract No. 4, Deep Fork Storm Sewer. $400,000. Benham Eng. Co., 215 N.E. 23 St., Oklahoma City, engr. CD 12/19/55.

† **Missouri** BA 2/15—U. S. Eng., 1800 Federal Office Bldg., Kansas City, Mo., Levee Unit 519-512-504 Sect. I, Lot I, clearing, grubbing, approx. 600,000 cu. yd. excav., drainage structures, approx. 600 lin. ft. 42 in. corrugated metal pipe with cut-off collards, sluice gates and flap gates, etc., north of St. Joseph, Buchanan Co., ENG-57-67. $400,000. CD 6/1/44.

HEAVY CONSTRUCTION—LB & CA

▲ **Iowa** State Hy. Comm., Ames,

Iowa—**Fred Carlson Co.**, Decorah, Iowa. CA **$551,324**. c. conc. 7.805 mi. F-151 (5), Henry Co.; CA **$583,359**. c. conc. 9.876 mi. F-87 (5) Muscatine Co.;

Iowa **Stade Constr. Co.**, Fairmont, Minn. CA **$907,708**. b. conc. 12.588 mi. F-773 (6), Cass and Potawattamie Counties. CD 1/14, under LB;

Iowa—**R. B. Burch, Inc.**, 249 33 St. Dr. S. E., Cedar Rapids, Iowa. CA **$712,018**. grading 10.751 mi. I-853 (5), Polk and Warren Counties. Bids Jan. 8. Grand total $2,754,409. CD 12/28.

▲ **Interstate Constr. Corp.**, 3621 Troost Ave., Kansas City, Mo. CA **$1,622,632**. (6 bidders), addn. to chemical bldg. at Water Dept. purification plant, addn. to incl. 6 chemical bins, two deep adjoining the present 6 bins, North Kansas City, KANSAS CITY, MO. City, City Hall, Kansas City Mo. Burns & McDonell Eng. Co., 95 and Troost Sts., Kansas City Mo., engr. Bids Jan. 16. CD 11/12/54.

▲† **Steenberg Constr. Co.**, 1371 Marshall Ave., St. Paul, Minn. CA **$3,527,576**. buildings and storage, Minot Air Force Base, Inv. ENG-25-066-57-3, MINOT, N. D. U. S. Eng., 1709 Jackson St., Omaha, Neb. Bids Nov. 14. CD 11/20, under LB.

† **Legnano Electric Corp.**, 37 Wall St., New York, N. Y. CA **$168,500**, one 75,000/100,000/125,000-kva (230/161-kv) autotransformer for Sioux City Substation, Missouri River Basin Proj. Transmission Div. DS 4764, SOUTH DAKOTA. Bureau Reclamation, Dpt. Interior, Bldg. 53, Denver Federal Center, Denver 2, Colo. Bids Dec. 11. CD 1121.

▲ **Texas Gulf Constr. Co.**, 2215½ Mechanic St., Galveston, Tex., CA **$2,099,950**. rehabilitation Pier 14, GALVESTON, TEX. The Galveston Wharves, 2402 Avenue C, Galveston, Tex. Bids Dec. 28. CD 12/13.

▲ **Texas Gulf Constr. Co., Inc.**, Box 2536, Houston, Tex. CA **$2,099,500**. reconstr. Piers 30, 32 and 33, GALVESTON, TEX. The Galveston Wharves, 2412 Avenue C, Galveston, Tex. Bids Dec. 17. (Correction-contractor). CD 12/15, under CA.

McKenzie Constr. Co., Box 806, San Antonio, Tex. LB **$153,025**. Proj. 16, storm sewers, SAN ANTONIO, TEX. City, City Hall, San Antonio, Tex. R. Marvin Shipman, 146 Olmos Dr., San Antonio, Tex., engr. Bids Jan. 8. CD 1/26/56.

▲† **Long Constr. Co.**, Lockwood Flats, Billings, Mont. LB **$1,100,887**, est. $582,421. rehab. Buffalo Bill Dam Shoshone, Spec. DC 4799, WYOMING. Bureau Reclamation, Dpt. Interior, Cody, Wyo. Bids Jan. 17. CD 1/2, under LB.

▲† **Dodlinger & Sons**, 1206 E. Lincoln St., Wichita, Kan. LB $3,334,000. 308x308 ft. cadet dining hall, Air Force Academy, IFB 05-613-57-10, COLORADO SPRINGS, COLO. Dist. Air Force, Box 1070, Colorado Springs, Colo. Bids Jan. 17. CD 12/31.

BUILDINGS—LB & CA

The Austin Co., 16112 Euclid St., Cleveland. CA Est. $500,000. general constr. OFFICE and WAREHOUSE, Olson Hy., E. of the "White House", GOLDEN VALLEY (P.O. MINNEAPOLIS), MINN. The Upjohn Co., Dr. E. G. Upjohn Pres., Kalamazoo, Mich.

▲ **Northern States Power Co.**, 15 S. Fifth St., Minneapolis, Minn. Own Forces: $1,250,000. SUB-STATION at Wold-Chamberlain Airport. $885,000. SUB-STATION at Fridley, near Moore Lake, MINNEAPOLIS, MINN. CD 1/18.

Northern States Power Co., 15 S. Fifth St., Minneapolis, Minn. Own Forces. $250,000. SUB-STATION in downtown area, rebuilding 34,500 volt for sub-station, ST. CLOUD, MINN. CD 1/18.

Paulson Constr. Co., West Branch, Iowa. LB $121,395. (6 bidders), LAUNDRY, University of Iowa, IOWA CITY, IOWA. State Bd. Regents, State Office Bldg., Des Moines, Iowa. Bids Dec. 21. CD 4/13.

Doyle Building Co., McLaran Ave., south of West Florissant; Jennings 21, Mo. Owner Builds. $350,000. 30 addnl. one story, bsmnt. BRICK RESIDENCES, in Sheppard Hills subdivision, JENNINGS (ST. LOUIS 21 P. O.), MO.

Cain, Brogdon & Cain, 2333 Grafton St., Fort Worth, Tex. LB $479,000. Base Bid, general contract Dunbar Elementary SCHOOL, FORT WORTH, TEX. Fort Worth Public Schools, Ed P. Williams, bus. mgr., 1210 W. Lancaster St., Fort Worth, Tex. Bids Jan. 15. CD 11/8.

▲ **Brown & Root, Inc.**, 4100 Clinton Dr., Houston, Tex. and **R. O. Busby Eng. Constr. Co.**, 1st Federal Savings Bldg., Beaumont, Tex. CA Est. $5,500,000. sulphur mining extraction PLANT, 15 mi. S. E. of Beaumont, FANNETT, TEX. Texas Gulf Sulphur Co., 2nd National Bank Bldg., Houston, Tex. CD 3/28.

▲ **First Christian Church**, 1501 Main St., Houston, Tex. cancelled bids to have been opened Jan. 10, CHURCH PLANT, HOUSTON, TEX. Est. $1,100,000. CD 12/21.

▲ **C. L. Browning, Jr.**, 903 Basse St., San Antonio, Tex. LB $8,120,000, Schedule A; LB $8,105,000, Schedule B; LB $8,098,000, Schedule C, (3 bidders) construct and finance permanent family HOUSING, Inv. 25-066-57-9, CAMP CARSON, COLO. U. S. Eng., 1709 Jackson St., Omaha, Neb. Bids Jan. 17. CD 1/11. **Floyd A. Harrison & Assocs.**, 2117 N. W. Britton St., Oklahoma City, Okla., LB $7,988,000, Schedule D; LB $7,916,000, Schedule E; LB $7,886,000, Schedule F (Camp Carson, Colo.).

▲ **Craftsmen Constr. Co.**, 1337 East 18 Ave., Denver, Colo., LB $1,652,892 (combined with Lakewood School LB $3,282,785) 1 and 2 story 123,000 sq. ft. HIGH SCHOOL, Wheat Ridge, LB $1,658,796 (combined with Wheat Ridge School, LB $3,282,785) 1 and 2 story 123,000 sq. ft. high school 8 Ave. and Independence St., Lakewood; LAKEWOOD, COLO. Jefferson County School Dist. R-1, 1580 Yarrow St., Lakewood, Colo. Bids Jan. 10. CD 12/4.

† **Bradbury & Stamm**, 1217 First St. N. W., Albuquerque, N. M. LB $351,754, GYMNASIUM ADDN., Sandia Base, ENG-29-005-57-34, ALBUQUERQUE, N. M. U. S. Eng., Box 1538, Albuquerque, N. M. Bids Jan. 4. CD 12/20.

FAR WEST

BUILDINGS—BA

▲ **Utah, Provo**—CENTRAL BLDG.—BA 2/14—Brigham Young University, Mr. Joyce W. Tippetts, dir. Campus Planning, 865 N. 8th East, central building and men's residence halls. $3,000,000. Lowell E. Parrish, 314 E. South Temple, archt. for central hall. Kegley, Westphall & Arbogast, 800 S. Robertson Blvd., Los Angeles, Calif., archt. men's residence. CD 8/22/55.

▲ **Nev., Reno**—HOUSING—BA 2/20—Purch. & Contg. Office, Stead Air Force Base, construct and finance, 645 units Capehart Housing. Plans deposit $75. CD 2/14.

HEAVY CONSTRUCTION—LB & CA

▲† **Atomic Energy Comm.**, Idaho Operation Office, Idaho Falls, cancelled bids to have been opened Jan. 23, 50 mi. 132 kv transmission line at National Reactor Testing Station, Contr. AT (10-1)879. Idaho Falls, ARCO, IDAHO. $1,500,000. CD 12/31.

ARIZONA—State Hy. Dpt., 1739 W. Jackson St., Phoenix,

Copper State Constr. Co., P.O. Box 863, Mesa. CA $169,373. select material agg. base, bit. road mix, seal coat over previous alignment 4.5 mi. Oracle Jct.-Globe Hy., Pinal Co. Bids Dec. 20, awarded Jan. 7. CD 12/4.

▲ **Sound Constr. & Eng. Co.**, 1300 Alona St., Seattle, Wash. LB $5,472,282. (6 bidders), constr. of painting-facility hangar, MOSES LAKE, WASH. Boeing Airplane Co., 7755 E. Marginal Way, Seattle 4, Wash. Bids Jan. 15. CD 12/18.

† **J. P. Head P. & H. Co.**, 3 and Columbia Sts., Pasco, Wash. LB $571,395, est. $548,947. (9 bidders), furnish, install 6869 water meters in houses, stores and industrial plants, RICHLAND, WASH. Atomic Energy Comm., Hanford Operations Office, P. O. Box 550, Richland, Wash. Bids Jan. 2. CD 12/11.

▲ **CALIFORNIA**—State Div. Hys., 1120 N. S., Sacramento,

Ben C. Gerwick, Inc. and J. H. Pomeroy & Co., Inc., 120 Montgomery St., San Francisco, Calif. LB $2,309,498 (3 bidders) rein.-con., structural steel bridge across Petaluma Creek near Black Point on Sign Rte. 37, detours constructed and bridge approaches graded. Marin and Sonoma Counties. Bids Jan. 16. CD 12/21.

▲ **CALIFORNIA**—State Div. Hys., 1120 N. S., Sacramento,

Calif. **Frederickson & Watson Constr. Co.**, 873 81st Ave., Oakland, Calif. LB $3,144,444. (14 bidders) constr. four-lane divided hy. 9.4 mi. US 101 approx. 15 mi. west of Santa Barbara between Elwood and Gaviota, Santa Barbara Co.

Calif. **Baldwin Contg. Co., Inc. and H. Earl Parker, Inc.**, 12 and E Sts., Marysville, Calif. LB $2,400,697. (9 bidders) grading, surf. 3.6 mi. US 40 between 1 mi. east of Newcastle and 1 mi. Ave., in Auburn, constr. welded plate girder bridge, widen rein.-con. bridge. Placer Co. Bids Jan. 16. CD 12/21.

▲ **Guy F. Atkinson Co.**, P. O. Box 259, Long Beach, Calif. CA $3,870,800, est. $4,000,000. Ocean Blvd. Bridge, 3,143 ft. long, Contr. 2, Spec. HD-403, 6-lane high-level, LONG BEACH, CALIF. Long Beach Bd. Harbor Comrs., 1333 El Embarcadero St., Long Beach, Calif. Bids Jan. 10, awarded Jan. 14. CD 1/14, under LB.

† **P. J. Walker**, 3900 Whiteside St., Los Angeles 63, Calif. LB $444,641, est. $500,000. (9 bidders), warehouse, A. I. O. annex and railroad spur, Edwards Air Force Base, ENG-04-353-57-13, MUROC, CALIF. U. S. Eng., 751 S. Figueroa St., Los Angeles, Calif. Bids Jan. 15. CD 1/3.

BUILDINGS—LB & CA

W. E. Robertson Co., 4015 W. Jefferson Blvd., Los Angeles, Calif. CA $432,000, 36 DWELLINGS, Hansford and Walbrook Sts., PUENTE, CALIF. Robertson N. Whittier, Inc., 4015 W. Jefferson Blvd., Los Angeles, Calif. Max Maltzman, 4015 W. Jefferson Blvd., Los Angeles, Calif., archt.

CANADA

HEAVY CONSTRUCTION—BA

Ont., Ottawa—BARRACK BLOCK—BA 2/12—Defence Constr. (1951), Ltd., 56 Lyon St., 2 story, approx. 120x283 ft. structural steel, concrete block barrack block, rein.-con. fdn. RCAF Base, Uplands. $350,000.

Que., St. Johns—BARRACK BLOCKS—BA 2/12—Defence Constr. (1951) Ltd., 56 Lyon St., Ottawa, Ont. two 324-man standard O.R. barrack blocks, for RCAF Base. $500,000.

HEAVY CONSTRUCTION—LB & CA

Tidewater Contg. Co., Ltd., Nanaimo, B. C., CA $190,000. tower foundations for 230,000 volt transmission line linking Cheakamus hydro-electric generating plant to Cheekye sub-station, 11 mi. north of Squamish, BRITISH COLUMBIA. British Columbia Electric Co., Ltd., 425 Carrall St., Vancouver, B. C. Awarded Jan. 8. CD 11/4/54.

Babcock-Wilcox & Goldie McCulloch, Ltd., 64 Grand St. S., Galt, Ont. CA $282,950. supply and install 3 water tube boilers and auxiliaries at HMCS Cornwallis Government Naval Station, DEEP BROOK, N. S. Defence Constr. (1951) Ltd., 56 Lyon St., Ottawa, Ont. Awarded Jan. 11.

George Allen & Son, 295 Madison Ave., New York, N. Y., U. S. A., LB $400,000. furnishing, erecting incinerator equipment, etc., HALIFAX, N. S. City, City Hall, Halifax, N. S. Bids Jan. 8. CD 1/4.

▲ **Fulton-Bannister**, Northern Hardware Bldg., Edmonton, Alta., CA Total Est. $1,250,000, incl. material and labor, constr. 32.6 mi. 24 in. pipe line loop from point near Kendal to point near Peebles, SASKATCHEWAN. Interprovincial Pipe Line Co., Ltd., 650 King St. W., Toronto, Ont. Awarded Dec. 28.

BUILDINGS—LB & CA

▲ **Lummus Co. of Canada, Ltd.**, 455 Craig St. W., Montreal, Que. CA Approx. $2,000,000. CATALYTIC REFORMING UNIT at refinery to produce 4,000 bbl. high-octane reformed gasoline daily, EDMONTON, ALTA. British American Oil Co., Ltd., 800 Bay St., Toronto, Ont. Awarded Jan. 9. CD 7/31.

Bernier & Gagne Ltd., 460 Blvd. Boivin, Granby, Que., CA $415,000. HOSTEL, RETREAT HOUSE, CHAPEL and MONASTERY, at Montplaisant on eastern outskirts of GRANBY, QUE. Les Peres Trinitaires, 1415 Pine Ave. W., Montreal, Que. Bids Sept. 26, awarded Jan. 11. CD 9/19.

J. Serrentino Constr. Co., Ltd., 6660 Decarie Blvd., Montreal, Que., CA Approx. $130,000 (7 bidders) foundation for crane runway at PLANT, MONTREAL, QUE. Canadian Vickers, Ltd., 4970 Notre Dame St. E., Montreal, Que. T. Pringle & Son, Ltd., 4975 St. Catherine St. W., Montreal, Que., engrs. Awarded Jan. 10.

ALASKA

HEAVY CONSTRUCTION—BA

† **Alaska**—WHITE ALICE FACILITY—BA 2/12—U. S. Eng., Anchorage. White Alice Facility with tower, equip. bldg., access road, etc., Inv. 57-41. CD 9/7, under LB.

LATIN AMERICA

HEAVY CONSTRUCTION—BA

▲ **Venezuela**—BA 3/7—Ministerio de Obras Publicas, Centro Simon Bolivar, Torre Sur, Caracas, D.F., 5.4 mi. bridge over outlet of Lake Maracaibo. Bids will only be accepted from companies who prepared plans on bid last year. $50,000,000. CD 12/20, under LB.

▲ **Argentina**—BA 8/9—Agua y Energia Electrica, Oficiana de Tallers y Suministros, Calle Lavalle, 1556, Buenos Aires,

Rio Hondo dam and water project, Province of Santiago del Estero.

thermoelectric plant in Buenos Aires.

dam at Valle Grande.

irrigation project at Arroyito.

transmission lines between [illegible] and Los Molinos; between San Roque and Cordoba.

[illegible] and El Nihuil power plants. Total $22,220,000. Plans deposit $1,500 pesos. CD 11/[illegible].

AMERICANS ABROAD

HEAVY CONSTRUCTION—LB & CA

▲ **AMF Atomic, Inc.** (American Machine & Foundry Co.) 261 Madison Ave., New York 16, N. Y., U. S. A., CA design and construct pool type reactor at Democritus Nuclear Research Center, near ATHENS, GREECE, operated by University of Athens, Athens, Greece. Greek Atomic Energy Comm., Athens, Greece.

PROPOSED PROJECTS

WATER SUPPLY

▲ **N. C., Charlotte**—City, City Hall, bond election Apr. 27, water sys. expans. $1,500,000.

▲ **S. C., Charleston**—Comrs. P. Wks., Charleston and Berkeley Counties, 14 George St., Charleston, WW tunnel dug through marl. $3,000,000. John E. Bettis, c/o owner, engrs. CD 12/29/52.

SEWERS, WASTE DISPOSAL

▲ **Fla., Opa Locka**—City, City Hall, 777 Sharazad Blvd., sewage treatment plant. $2,000,000. J. C. Cooper & Assocs., 2320 N.E. 171 St., N. Miami Beach, consult. engrs.

▲ **Minn., Austin**—City, J. H. Weiland, clk., voted $2,250,000 bonds Jan. 8, sewage disposal plant, Greeley & Hansen, 220 S. State St., Chicago, Ill., consult. engrs. To go ahead in 1957. CD 1/3.

BRIDGES

▲ **CONNECTICUT**—State Hy. Dpt., 165 Capitol Ave., Hartford,

Suffield and Thompsonville—bridge across Conn. River between Suffield and Thompsonville. $2,000,000.

▲ **Ill., Chicago**—City, City Hall, underpass North Ave. and NW. Superhighway. $1,000,000. Suhr, Berryman, Peterson & Suhr, Inc., 130 N. Wells St., consult. engr. CD 11/6/53.

▲ **NEW JERSEY**—Delaware River Port Auth., Bridge Plaza, Camden,

Burlington and Camden Counties—approachways for Ben Franklin Bridge. $20,000,000. Joseph K. Costello, exec. dir.

▲ **N. C., Charlotte**—City, City Hall, bond election Apr. 27, grade crossing eliminations. $1,500,000. CD 8/3/50.

STREETS AND ROADS

▲ **CONNECTICUT**—State Hy. Dpt., 165 Capitol Ave., Hartford,

Hartford and West Hartford—East-West Hy. and connectors, viaduct Bulkley Bridge to Market St. underpass at Main, Trumbull, Ann and High Sts., one lane underpass at Asylum Ave., one lane over at same location. $27,000,000. Bids in 1959. M. A. Kachele Assocs., 10 N. Main St., West Hartford, consult. engrs. Robert Mitchell, c/o owner, engr. CD 7/6.

▲ **Fla., Opa Locka**—City, City Hall, 777 Sharazad Blvd., street rehabilitation-sidewalk imprvs. $1,000,000. J. C. Cooper & Assocs., 2320 N.E. 171 St. N., Miami Beach, consult. engrs.

▲ **N. C., Charlotte**—City, City Hall, bond election Apr. 27 street imprvs. $1,500,000. CD 8/26/53.

▲ **PENNSYLVANIA**—State Hy. Dpt., 506 N. Office Bldg., Harrisburg,

Mercer and Monroe Counties—291 mi. Keystone Shortway from Sharon to Stroudsburg (recommended as part of Interstate System), $300,000,000. Michael Baker Jr., Inc., Rochester, consult. engr., made survey.

▲ **PENNSYLVANIA**—State Hy. Dpt., 506 N. Office Bldg., Harrisburg,

Philadelphia and Bucks Counties—30 mi. Delaware Expressway from Walt Whitman bridge to Penn Turnpike, paralleling the Delaware River. $300,000,000.

EARTHWORK, WATERWAYS

▲ **Illinois**—U. S. Eng., 420 Locust St., St. Louis, Mo., 110x1,200 ft. navigation lock at Dam 26, Mississippi River near Alton. $5, 802,000. (No appropriation). Tippetts-Abbett-McCarthy-Stratton, 62 W. 47 St., New York 36, N. Y., consult. engrs.

▲ **Massachusetts**—U. S. Eng., 150 Causeway St., Boston, flood control proj., Worcester Diversion, small dam 30 ft. high Lakeville Pond divert into tunnel thru Poncapoag Hill into Blackstone River, Auburn and Millbury. $5,670,000 ($840,000 appropriated), Justin & Courtney, 121 S. Broad St., Phila., Pa., consult. engrs.

AIRPORTS

▲ **Ky., Covington**—AIRPORT IMPRVS.—Kenton County Airport Bd., Third and Court Sts., plans by Howard Elston, Covington, exten. Greater Cincinnati Airport, 2 story, bsmnt., brick bldg., near here. $1,000,000.

Hall, McAlester & Stockwell, 706 Walnut St., Cincinnati, O., consult. engrs. Schofield & Weed, 331 Madison Ave., New York, N. Y., engrs. Sky Chefs Restaurant, lessee.

▲ **N. Y., Jackson Heights**—AIRPORT IMPRVS.—Port of New York Auth., 111 Eighth Ave., New York, Zone 11, remodeling and modernization of LaGuardia Airport to incl. tripling length of 3 story main terminal, filling lagoon between present airport area and Grand Central Parkway. New space to be used for heliport and parking area; erecting four double deck loading fingers extending from terminal bldg. toward runway area. **$30,000,000.** Project to go ahead if, as and when Port of New York Authority works out new leases and negotiates other problems with airlines using LaGuardia Airport.

PUBLIC BUILDINGS

▲ **Ariz., Yuma**—HOSPITAL—Yuma Hospital Dist. 1, Yuma, plan by Neilsen & Moffatt, 4072 Crenshaw Blvd., Los Angeles, Calif., 1 story, 75-bed, reinf.-con. masonry hospital. **$1,250,000.**

▲ **Calif., San Francisco**—SCHOOLS—City and San Francisco Co., Dpt. P. Wks., City Hall, plans by Gardner A. Dailey, 442 Post St., Southeast High School, McLaren Park area, **$4,400,000**; plans by Masten & Hurd, 526 Powell St., Lowell High School off Lake Merced Blvd., near Winston Dr., **$4,440,000**; plans by Clarence W. Mayhew, 251 Post St., Golden Gate Elementary School, **$1,070,000**; plans by Donald Francis Haines, 320 Market St., Portola Junior High School addn., **$550,000**; plans by Mario J. Ciampi, 425 Bush St., auditorium at James Denman Junior High School, **$440,000.** Charles W. Griffiths, city engr. CD 11/9.

▲ **Colo., Colorado Springs**—DORMITORY, etc.—The Colorado Colleg c/o Dr. L. F. Benezet, pres., Colorado Springs, men's dormitory and student union bldg., Colo. 5-CH-29. **$1,056,000.**

▲ **Colo., Englewood**—SCHOOLS—Arapahoe County School Dist. 1, Englewood, voted bonds Jan. 14, schools. **$2,500,000.** CD 12/13.

▲ **Colo., Fort Collins**—STUDENT UNION—Colorado A & M College, c/o J. M. Whaley, bus. mgr., Fort Collins, student union bldg., Colo.-5-CH-30. **$2,700,000.**

▲ **Conn., Cheshire**—HIGH SCHOOL—Town, constr. Junior High School, northern area. **$1,600,000.**

▲ **Conn., Fairfield**—SCHOOL—Town, Town Hall, Greenfield Elementary School. **$1,000,000.**

▲ **Ga., Atlanta**—SCHOOL—Fulton Co. Bd. Educ., Courthouse, voted **$3,000,000** bonds Jan. 15, schools. CD 12/10.

▲ **Illinois**—ADMINISTRATION—Illinois Toll Hy. Comn., 20 N. Wacker Dr., Chicago, central admin. bldg. maintenance shop and 8 maintenance structures, Drefage Co. **$3,708,000.** Lankton, Ziegele, Terry & Assoc., Peoria, consult. engrs. CD 10/16.

▲ **Ill., Chicago**—SCHOOL—Bd. Educ., 228 N. La Salle St., plans by John C. Llewellyn Co., 38 S. Dearborn St., Chas. A. Prosser Vocational High School, 2148 N. Long Ave. **$1,500,000.**

▲ **Iowa, Eldridge**—SCHOOL—North Scott Community School Dist., voted bonds, high school. **$1,100,000.**

▲ **Ind., Sullivan**—HOSPITAL—Comrs. Sullivan Co., Courthouse, 1 story concrete hospital. **$1,000,000.**

▲ **Mass., Athol**—SCHOOL—Town, J. Harold Moody, supt. Schools, plans by Alderman & MacNeish, 594 Riverdale St., West Springfield, regional high school, **$1,888,000.** Bids in February. CD 1/10/56.

▲ **Mass., Foxboro**—ADMISSION and TREATMENT—State, Dpt. Mental Health, c/o Div. Bldg. Constr., 38 Chauncy St., Boston, plans by Perley Gilbert & Assoc., Inc., Sun Bldg., Lowell, admission and treatment bldg., State Hospital. **$1,900,000.** Bids in March.

▲ **Mich., St. Clair Shores**—City, Lake Shore District, 23700 Mack St., state municipal finance commission turned down Jan. 9 the **$2,000,000** bond issue for schools approved Oct. 1 by voters, reason exorbitant consultant's fee. CD 10/9.

▲ **Mo., Webster Groves (St. Louis 19 P. O.)**—SCHOOL—School Dist. of Webster Groves, Bd. Educ., 16 Selma Ave., **$3,175,000** bonds election Feb. 5, Junior High School, elemenary school, school imprvs. CD 4/6/56.

▲ **Neb., Omaha**—POLICE STATION, etc.—City, City Hall, police station and jail with garage. **$2,500,000.** E. W. Woodbridge, city engr.

▲ **N. J., Ewing Twp. (P. O. Trenton)**—SCHOOL—Bd. Educ., Ewing Twp., plans by Micklewright & Mountford, E. Stuyvesant Ave. at Prospect St., Trenton, school to replace Lanning school located on Lanning School Property. **$1,500,000.** CD 1/4.

▲ **N. J., Highland Park**—SCHOOL—Bd. Educ., Borough of Highland Park, plans by Alex. Merchant, Jr., 1 Elm Row, New Brunswick, new high school bldg., to consist 1,200 capacity 14 new classrooms, clinic, cafeteria, auditorium, gymnasium. **$1,545,000**; Irving School addn., consisting of administrative quarters, an all-purpose room and four new classrooms. **$345,000.**

▲ **N. J., Passaic**—SCHOOL—City, City Hall, elementary school on East Side of City, on 2 acre site east of 4th St. between Bergen and Mercer Sts., 17 classrooms multipurpose, combined gym-aud., several special purpose rooms. **$1,000,000.** CD 11/21/45.

▲ **N. J., Plainfield**—SCHOOLS—Bd. Educ., Plainfield, plans by Ernest T. Brown, 7 Watchung Ave., constr. Maxson School addns., Woodland Ave. and East 7th St., converting 17 room bldg. to 36 room bldg. with auditorium and cafeteria, **$1,500,000**; conversion of Hubbard School from 17 to 31 room bldg. with cafeteria and enlarging auditorium and gym., **$1,141,000.** To be complete by Sept. 1958. Will ask for bids Mar. 1957, for latter project.

▲ **N. J., Woodbridge**—SCHOOL—Bd. Educ., Woodbridge Twp., Junior High School in the Fords area. **$5,000,000.** CD 7/13.

▲† **N. M., Gallup**—HOSPITAL—U. S. Public Health Service, 4 St. and Independence Ave. S.W., Wash., D. C., plans by Flatow, Moore, Bryan & Fairburn, archts.-engrs., 1840 Lomas Blvd. N.E., Albuquerque, hospital and out-patient clinic for Bureau of Indian Affairs. **$3,000,000.**

▲ **N. Y., East Meadow**—SCHOOL—East Meadow School Bd., referendum vote on Jan. 26, 5 school addns. **$3,000,000.** CD 10/16/53.

▲ **N. C., Charlotte**—HOSPITAL—City, City Hall, bond election, Apr. 27, Charlotte Memorial Hospital expans. **$4,000,000.**

▲ **O., Brooklyn**—HIGH SCHOOL—Bd. Educ., Clarence Rice, supt., 9700 Biddulph Ave., Cleveland, Zone 9, plans by Outcalt, Guenther & Assocs., 13124 Shaker Square, Cleveland, Zone 20, high school. **$1,300,000.** Bids about middle of March. CD 5/11.

▲ **O., Cleveland**—BUS STORAGE, GARAGE—City, Cleveland Transit Sys., 1040 E. 9th St., Zone 14, plans by Dalton & Dalton, The Arcade, Zone 14, 1 story, 250×500 ft. pre-stressed concrete block and brick bus storage and maintenance garage, 13405 Lakewood Heights Blvd. **$1,500,000.** Bids about middle of March 1957. Ralph Wood, c/o owner, ch. engr. CD 2/27/50, under Unclassified.

▲ **O., Columbus**—HOUSING—Columbus Metropolitan Housing Auth., 425 W. Rich St., plans by C. Curtiss Inscho, archt.-engr., 60 E. Broad St., 500-unit public housing, Milo area, northeast of here. Windsor, Bonham, St. Clair Aves. and N. Y. C. RR., **$7,000,000.** To go ahead 1957. CD 11/14/55.

▲ **Ore., Pendleton**—HIGH SCHOOL—Pendleton School Dist. 16C, Pendleton, plans by Culler, Gale, Marell & Norris, Realty Bldg., Spokane, Wash., high school. **$1,750,000.** Bids in Spring.

▲ **Pa., Waynesboro**—HOSPITAL—Waynesboro Hospital, Waynesboro, plans by Satterlee & Smith, 3 Dupont Circle N.W., Wash., D. C., hospital addn. **$1,000,000.**

▲ **R. I., Warren**—HIGH SCHOOL—Town, School Comm., Warren, plans by William O'Rourke, 90 Union St., high school, Childs St. **$1,200,000.** Bids in Spring. CD 7/31.

▲ **Tex., Dumas**—SCHOOLS—Dumas Independent School Dist., Dumas, plans by Fred Buford & Assocs., archts.-consult. engrs., 500 Interurban Bldg., Dallas, Senior High School imprvs., addns., **$665,000**; Junior High School imprvs., addns., **$500,000**; elementary schools imprvs., addns., **$500,000.** CD 12/7.

▲ **Vt., Burlington**—HIGH SCHOOL—City, c/o Supt. Schools, Burlington, plans by Freeman, French & Freeman, 138 Church St., 62,800 sq. ft. North End Junior High School. **$1,000,000.** Bids before summer.

▲ **Wash., Steilacom**—MEN'S WARD—State Dpt. P. Institutions, Olympia, men's ward bldg. at Western State Hospital. **$1,050,000.** Bids may be called this year.

▲ **Ont., Ottawa**—WAREHOUSE, etc.—Liquor Control Bd. of Ontario, 55 Fleet St. E., Toronto, warehouse and retail store, off Metcalfe Hy. **$2,000,000.**

COMMERCIAL BUILDINGS

▲ **Calif., El Centro**—HOUSING—P. Wks. Office, 11th Naval Dist., San Diego, plans by Paderewski, Mitchell & Dean, archts.-consult. engrs., 521 "B" St., San Diego, construct and finance, 241 units Capehart Housing, Naval Auxiliary Air Station. **$3,976,500.**

▲ **Calif., Los Angeles**—DWELLINGS—Dave Appel, 5143 Sunset Blvd., 93 lot subdivision, northwest of Van Owen St. and Fallbrook Ave., Van Nuys Dist., Tract 22230. **$1,000,000.** Seaboard Eng. Co., 8844 Olympic Blvd., Beverly Hills, consult. engr.

▲ **Calif., Los Angeles**—COLLEGE—Immaculate Heart College, 2021 N. Western St., Los Angeles, Zone 27, plans by Chaix & Johnson, 2504 W. 7 St., five year building program. **$4,000,000.** First unit administration bldg., approx. $1,000,000.

▲ **Calif., Mojave**—HOUSING—P. Wks. Office, 11th Naval Dist., San Diego, plans by Tuttle-Kellog Architectural Engineering Co., Inc., archt.-consult. engr., 4251 E. Live Oak St., Arcadia, construct and finance, 695 units Capehart Housing, Marine Corps Auxiliary Air Station, **$11,467,500.** CD 12/20/55, under Airports.

▲ **Calif., Palmdale**—DWELLINGS—Ben Weiner, 13312 Van Nuys Blvd., Pacoima, 115 lot subdivision, Tract 23590, northeast of Avenue "R" and Division St. **$1,250,000.**

▲† **Calif., Point Mugu**—HOUSING—P. Wks. Office, 11th Naval Dist., San Diego, plans by Hugh Gibbs, archt.-consult. engr., 441 E. 1st St., Long Beach, construct and finance, 360 units Capehart Housing, Naval Air Missile Test Center. **$5,940,000.**

▲ **Calif., San Francisco**—APARTMENTS—Albert-Lovett Co., c/o Paul Hammarberg, company archt., 2941 Telegraph Ave., Berkeley, two 12 story apartments, Nob Hill. **$3,000,000.** Bids in summer.

▲ **Calif., San Francisco**—APARTMENT—Andre Bosco, 110 Sutter St., 18-20 story apartment with parking garage, Nob Hill. **$2,500,000.**

▲ **Colo., Colorado Springs**—RESIDENCES—United Constr. Co. & Ross E. Cox, Mile High Center Bldg., Denver, residential development, east of here. **$4,000,000.**

▲ **Conn., Enfield**—HOUSES—Green Manor Estates, Inc., 681 Parker St., Manchester, 393 houses, Taylor Rd., Scitico, **$3,930,000.**

▲ **Conn., Thompsonville**—HOUSES—Leger Storr, North Rd., Hazardville, 200 houses, Neelans tract. **$2,000,000.**

▲ **Conn., Thompsonville**—HOUSES—John Woods, Brainard, Rd., 288 houses, Brainard Rd. **$2,880,000.**

▲ **D. C., Wash.**—HOUSING, etc.—William Zeckendorf & Webb & Knapp, 383 Madison Ave., New York, N. Y., government bldgs., homes, entertainment center, parks, shops, schools and churches. Housing & Home Finance Agency, Wash., D. C., made a grant of $24,097,604, incl. cost of relocating families and a loan of $79,728,350 for constr. Total **$500,000,000.** CD 3/17/54.

▲ **Ga., Brunswick**—HOUSING—Dist. P. Wks. Office, Bldg. 12, U. S. Naval Base, Charleston, S. C., plans by Abreu & Robeson, 141 Walton St. N.W., Atlanta, 590 housing units, Capehart Act, Glynco Naval Air Station. **$9,735,000.** CD 9/7.

▲ **Ill., Chicago**—OFFICE—Samuel W. Banowit, National Properties, Inc., c/o A. Epstein & Sons, archts., 2011 W. Pershing Rd., 39 story office bldg., Jackson and Clark Sts. **$20,000,000.**

▲ **Ill., Chicago**—OFFICE—Ill. Bell Telephone Co., 208 W. Washington St., plans by Holabird, Root & Burgee, 180 N. Wabash St., 4 story, brick North Center accounting office bldg., Grace and Western Aves. **$1,000,000.**

▲ **Ind., Indianapolis**—SHOPPING CENTER—Atkinson & Co., 250 E. 38th St., shopping center called Southwood Com. Center, N.S. Banta Rd., between U. S. 31 and S. Meridian St., Perry Twp., Marion Co., incl. 45 stores, etc. and parking space for 2,000 autos. **$2,500,000.**

▲ **Ind., Indianapolis**—APARTMENTS—Warren M. Atkinson, 250 E. 38th St., two 9 story, apartment bldgs., 91st and Illinois Sts., **$2,600,000.**

▲ **N. J., Brigantine**—COUNTY CLUB—Owner, c/o Louis A. Alell, 1600 S. Broad St., Phila., Pa., country club, golf course, yacht club, yacht basin, civic center. **$1,000,000.**

▲ **N. Y., Clinton**—DORMITORY—Hamilton College, Clinton, plans by Adams & Woodbridge, 216 E. 37 St., New York, Zone 16, dormitory. **$1,250,000.** CD 6/12.

▲ **N. Y., New York**—OFFICE—Arcade Parking Terminal, Inc., c/o Max Siegel, archt., 1841 Broadway, Zone 23, 4 story office, 1660 Broadway, between 51 and 52 Sts. **$1,500,000.**

▲ **N. Y., New York**—FERRIS BOOTH HALL—Columbia University, 116 St. and Broadway, plans by Shreve, Lamb & Harmon, 1 E. 44 St., New York, Ferris Booth Hall (Columbia College Citizenship Center), 2 story auditorium and 4 story student activities wing, 13 story dormitory at Broadway and W. 114 St. **$3,850,000.** Bids in about 6 months.

▲ **N. Y., New York**—APARTMENT—East Tenth Corp., 775 Lexington Ave., Zone 21, plans by H. I. Feldman, 415 Lexington Ave., New York, Zone 17, 6 story apartment, 75-91 Fourth Ave. **$1,550,000.**

▲ **N. Y., New York**—APARTMENT—Webb & Knapp, Inc., 270 Park Ave., New York, Zone 17, apartment First Ave. from 79 to 80 Sts. **$1,000,000.**

▲ **N. Y., Olean**—Y.M.C.A. BLDG.—Young Men's Christian Assn., Olean, Y.M.C.A. bldg. **$1,194,000.**

▲ **O., Mayfield Heights**—HOSPITAL—Hillcrest Hospital, c/o Dr. Richard Renner, Doctor's Hospital, 12345 Cedar Rd., Cleveland, Zone 6, 200-bed, 5 story, four-wings general hospital, Mayfield Rd. **$5,000,000.**

▲ **O., Oberlin**—HUMANITIES—Oberlin College, Bd. Trustees, C. Robert Keesey, dir. Development, Oberlin, humanities bldg. **$1,500,000.**

▲ **O., Tiffin**—SHOPPING CENTER—A. Visconsi & Assocs., 6865 Pearl Rd., Cleveland, Zone 30, plans by Rudolph J. Gosel, The Arcade, Cleveland, Zone 14, 38-unit shopping center, Westgage subdivision, western edge of city. **$2,500,000.**

▲ **R. I., Providence**—PSYCHOLOGY—Brown University, Barnaby C. Keeney, pres., Prospect St., plans by Perry, Shaw, Hepburn & Dean, 31 St. James Ave., Boston, Mass., 3 story, masonry psychology bldg., Waterman and Prospect Sts. **$1,233,000.** 1957 Constr. CD 9/28/55.

▲ **Tex., Houston**—SHOPPING CENTER—Lewis O. Tyra, c/o Irving R. Klein & Assocs., archts., 1317 Austin St., 2nd unit shopping center, Gulf Freeway in Freeway Manor Addn. **$1,500,00.** Bids in summer.

▲ **Tex., Rosenberg**—SHOPPING CENTER—Rose-Rich Shopping Center, c/o Elbert Pollan, Rosenberg, plans by Golemon & Rolfe, 5100 Travis St., Houston, shopping center. **$1,000,000.** S. A. Russell, Rosenberg, consult. engr. CD 5/9.

▲ **Wash., Lynwood**—HOUSING—A. Balch & L. Coglas, 8050 35 Ave. N. E., Seattle, housing development, east of Cedar Way on both sides of 222 Ave. S. W. **$4,000,000.**

▲ **Que., Three Rivers**—HOSPITAL WING—Rev. Soeurs de la Charite de Providence, Hospital St. Joseph, 773 St. Julie St., hospital wing addn. **$1,000,000.**

▲ **Que., Three Rivers**—HOUSING—J. Paul Desaulniers, Ameau Bldg., housing program, 150 flats, in Normanville Dist. **$1,000,000.**

▲ **Que., Three Rivers**—HOUSING—Fernand Spenard, 936 Notre Dame St., 100 cottages, Spemont Dist. **$1,200,000.**

INDUSTRIAL BUILDINGS

▲ **Ariz., Tucson**—PLANT—Tucson Gas, Electric Light & Power Co., 35 W. Pennington St., power plant and 148 foot water tower, **$11,000,000.**

▲ **Ill., Peoria**—PLANT—Caterpillar Tractor Co., Peoria, 500,000 sq. ft. industrial engine plant, research center and general offices, **$5,000,000.**

▲ **Minn., Minneapolis**—WAREHOUSE, etc—Northern States Power Co., 15 S. Fifth St., remodel owner's warehouse at 16 and Chestnut Sts., **$1,550,000,** Bids in Summer; sub-station at Wold-Chamberlain Airport, **$1,350,000;** sub-station at Fridley, near Moore Lake, **$885,000,** To go ahead in 1957. Hibbert Hill, ch. engr.

★ **N. J. Carneys Point (Br. Penns Grove)**—PLANT—E. I. duPont de Nemours & Co., duPont and Nemours Bldgs., Wilmington 98, Del., chemical plant to mfg. Sodium CMC, a synthetic gum at Carneys Point works. **$2,000,000.**

▲ **N. J., Hopewell**—FACTORY-OFFICE—Bristol-Myers, 630 Fifth Ave. New York, N. Y. factory-office, Scotch Rd. Project indefinitely postponed. **$1,000,000.** CD 7 13.

▲ **Tex., Houston**—PLANT—Baker Oil Tools, Inc., 6023 Navigation Bldg., mfg. plant, **$2,750,000;** warehousing or storage, **$250,000.** 75-acre site on Hempstead Hy. CD 3 31 54.

▲ **Tex., Houston**—POWER PLANT—Houston Lighting & Power Co., 1016 Walker St., Unit 2, 230,000-kw electric power plant, area W. Montgomery Rd. **$30,000,000.** Ebasco Services, Inc., Box 1700, consult. engrs. CD 1 7.

▲ **Tex., Houston**—FACTORY—Continental Can Co., 105 N. Greenwood St., factory, Canal St., N. Esperson Industrial Dist. **$1,000,000.**

▲ **Texas., Texas City**—PLANT—Wah Chang Corp., 233 Broadway, New York, N. Y., convert Texas City Tin Smelter Plant to plant for producing tin, tin alloys and tungsten products. **$1,500,000.**

▲ **Wash., Seattle**—DELIVERY CENTER—**Boeing Airplane** Co., 7755 E. Marginal Way, Zone 4, delivery center for Model 707 transport planes with shop and office bldg. and storage and delivery area at south end of Boeing Field. **$3,500,000.** Work to start in spring.

▲ **Que., Montreal**—REFINERY—Shell Oil Co. of Canada, Ltd., 25 Adelaide St., Toronto, Ont., and 10501 Sherbrooke St. E., Montreal, oil refinery reconstr. Sherbrooke St. E., main pumphouse and several storage tanks, **$1,000,000.**

▲ **Sask., Saskatoon**—PLANT—Potash Co. of America, Carlsbad, N. D., 4,000-5,000 **tons per day potash** plant. **$20,000,000.** Stearns-Roger Mfg. Co., 660 Bannock St., Denver, Colo., consult. engr.

UNCLASSIFIED

▲ **Calif., San Francisco**—PIER, etc.—Port of San Francisco, Ferry Bldg., 500 ft. pier extens., **$2,400,000;** 50 ft. pier exten. and covered cargo handling space, **$400,000;** concrete cargo and passenger sheds addns. **$900,000.**

▲ **D. C., Wash.**—BELL TOWER—Robert A. Taft Memorial Foundation, Union Trade Bldg., plans by Douglas Orr, 111 Whitney Ave., New Haven, Conn., bell tower, **$1,500,000.**

▲ **Florida**—RURAL DISTRIBUTION LINES—Talquin Electric Co-operative, Quincy, 179 mi. electric distr. line, 7.5 mi. 69 kv transmission line, 4 new sub-stations and sys. imprvs., Gadsden Co. **$1,450,000.** CD 6 21 55.

▲ **Missouri**—GAS DISTRIBUTION SYSTEM—Laclede Gas Co., 1017 Olive St., St. Louis, Zone 1, extens., imprvs. to natural gas distr. sys. in St. Louis and St. Louis County. **$11,500,000.** To go ahead in 1957.

▲ **Montana**—RURAL DISTRIBUTION LINES—Sheridan County Electric Co-operative, Medicine Lake, 47 mi. rural distr. lines, 33 mi. 57 kv transmission line, 3 sub-stations, sys. imprvs., Sheridan Co. **$1,526,000.**

▲ **N. Y., Brooklyn**—PIER—Port of New York Auth., 111 Eighth Ave., New York, Zone 11, 3-berth pier in Fulton Terminal to be known as Pier 1, 36 St. south of Brooklyn Bridge; L-shaped 1,090 ft. on west side 500 ft. on south side, will replace obsolete Piers 3, 4, 5 and 6. **$7,350,000.** To go ahead in April. CD 11/1/55.

▲ **Ohio**—STORAGE WELLS, etc.—Ohio Fuel Gas Co., 109 N. Front St., Columbus, drilling 10 new storage wells and conversion of 51 former producing wells in Holmes underground storage field to storage, development of other storage fields by drilling 25 addnl. wells and converting 60 existing wells to storage, Holmes Co. **$720,000;** underground storage area for natural gas, west of McArthur, having 10½ billion, cu. ft. capacity, incl. drilling 90 storage wells, convert 6 wells from producing to storage, 15.1 mi. new pipe line and new compressor station, Vinton Co., **$2,700,000.** Pending approval of Federal Power Commission.

▲ **Tenn., Chattanooga**—FREIGHT YARDS, etc.—Nashville, Chattanooga & St. Louis Ry., J. L. Fergus, act. ch. engr., 930 Broadway, Nashville, Zone 3, new freight yards and relocation of main rail lines to eliminate grade crossings, etc. **$10,000,000.** CD 10/13 53.

▲ **Alberta-British Columbia**—PIPE LINE, PLANT—Westcoast Transmission Co., Ltd., 424 Burrard St., Vancouver 1, B. C., 174 mi. 30 in. pipe line from gas field at Savanna Creek, Alta. to Kingsgate, B. C. with sulphur plant in southwestern Alberta. **$45,000,000.** CD 10/23/52.

▲ **British Columbia**—GAS LINE—Westcoast Transmission Co., Ltd., 424 Burrard St., Vancouver, enlarging main gas line with compressors, stations. **$55,000,000.** CD 10/23/52, under Alberta and British Columbia

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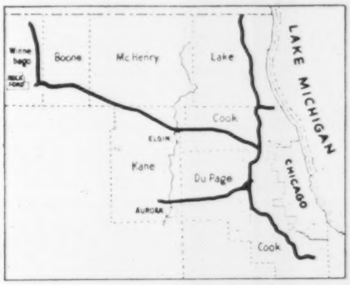
ADVERTISEMENT FOR BIDS



Northern Illinois Toll Highway

Bids to be opened February 21, 1957

CONTRACT T-13A

The Work to be done under this Contract shall be commenced on May 15, 1957, or on such earlier date as may be mutually agreed upon between the Commission and the Contractor. All work under this Contract shall be completed on or before July 31, 1958, and consists of:

The grading, drainage, paving, the construction of appurtenances, and the erection of precast concrete bridges for approximately 4.85 miles of the Northern Illinois Toll Highway, Tri-State Route, in Construction Section T-13A thereof, beginning at a point approximately 0.36 miles north of Belvidere Road, State Route 120, at Tri-State Route Station 836 + 00 in Warren Township, Lake County, Illinois, and extending northerly, along the project centerline to a point approximately 500 feet north of Town Line Road, TR 36, at Tri-State Route Station 1092 + 00 in Newport Township, Lake County, Illinois.

The approximate quantities of the principal items of work are as follows:

Roadway Excavation, unclassified	750,000 Cu. Yds.
Borrow	360,000 Cu. Yds.
Selected Subgrade	122,000 Cu. Yds.
Granular Subbase	70,000 Cu. Yds.
10" Reinforced P.C.C. Pavement	213,000 Sq. Yds.
3" Bituminous Concrete Shoulders	111,500 Sq. Yds.
Structural Concrete	6,600 Cu. Yds.
Reinforcing Steel	866,000 Lbs.

CONTRACT CNI-1

The work to be done under this Contract consists of:

The furnishing, delivering and erecting of prestressed concrete cylinder piles for approximately 80 bridges on the Northern Illinois Toll Highway. The Work is located on the North Illinois Route extending northwest from Chicago, Illinois, approximately 88 miles to Illinois-Wisconsin state line; on the Tri-State Route extending north from the Illinois-Indiana state line south of Chicago approximately 80 miles to the Illinois-Wisconsin state line north of Chicago; and on the East-West Route extending west from Chicago approximately 34 miles to Aurora, Illinois. The prestressed cylinder piles shall be 36 inches outside diameter and shall have a minimum shell thickness of 1½ inches.

The approximate quantities of the principal items of work are:

Prestressed Concrete Cylinder Piles, Furnishing and Delivering	53,600 L.F.
Prestressed Concrete Cylinder Piles, Erecting	52,100 L.F.

Bids to be opened February 14, 1957

CONTRACT E-2A

The work to be done under this Contract shall be commenced on May 15, 1957 or on such earlier date as may be mutually agreed upon between the Commission and the Contractor. All work under this contract shall be completed on or before December 15, 1958 and consists of:

The grading, drainage, paving, the construction of appurtenances, and the erection of precast concrete and structural steel bridges for approximately 7.931 miles of the East-West Route of the Northern Illinois Toll Highway in Construction Section E-2A thereof, beginning at a point about 2,000 feet east of SA Route 5 at the Northern Illinois Toll Highway centerline Station 7430 + 10 in Lisle Township, DuPage County, Illinois, and extending easterly to a point approximately 1,150 feet west of Midwest Road at Northern Illinois Toll Highway centerline Station 7848 + 85 in York Township, DuPage County, Illinois.

The approximate quantities of the principal items of work are as follows:

Roadway Excavation, Unclassified	1,168,000 Cu. Yds.
Borrow	314,000 Cu. Yds.
Selected Subgrade	175,000 Cu. Yds.
Granular Subbase	92,000 Cu. Yds.
10" Reinforced PCC Pavement	271,000 Sq. Yds.
Bituminous Concrete Shoulders, 3 inch	150,000 Sq. Yds.
Structural Concrete	7,500 Cu. Yds.
Reinforcing Steel	1,000,000 Lbs.
Structural Steel, Erection	772,000 Lbs.

CONTRACT N-3B

The work to be done under this Contract shall be commenced on April 1, 1957 or on such earlier date as may be mutually agreed upon between the Commission and the Contractor. All work under this Contract shall be completed on or before July 31, 1958 and consist of:

The grading, drainage, paving, the construction of appurtenances and the erection of precast concrete bridges for approximately 6.12 miles of the Northern Illinois Toll Highway in Construction Section N-3B thereof, beginning at a point approximately 600 feet east of Town Hall Road at Northern Illinois Toll Highway Centerline Station 611 + 00 in Flora Township, Boone County, Illinois, and extending easterly to a point approximately 325 feet east of Markley Road at Northern Illinois Toll Highway Centerline 934 + 00 in Spring Township, Boone County, Illinois.

The approximate quantities of the principal items of work are as follows:

Roadway Excavation, Unclassified	622,000 Cu. Yds.
Borrow	692,000 Cu. Yds.
Selected Subgrade	130,000 Cu. Yds.
Granular Subbase	70,000 Cu. Yds.
10" Reinforced PCC Pavement	199,000 Sq. Yds.
Bituminous Concrete Shoulders	125,000 Sq. Yds.
Structural Concrete	5,600 Cu. Yds.
Reinforcing Steel	855,000 Lbs.

Previously advertised bids for Contract T-7A will be opened February 7, 1957.

Write, wire or phone for detailed information and necessary forms, Chief Engineer, Room 1654, 20 No. Wacker Dr., Chicago 6, Ill. Telephone FRanklin 2-7020.

THE ILLINOIS STATE TOLL HIGHWAY COMMISSION

20 N. Wacker Dr., Chicago — ***By Austin L. Wyman, Chairman***

Bids—Low Bids—Contracts—Second Section

NEW ENGLAND

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
STREETS AND ROADS
February 6 Connecticut

▲† **Massachusetts**—BA 2/20—U. S. Eng., 111 E. 16 St., New York 3, N. Y., flood control proj., Unit No. 5, North Adams. $3,000,000-$5,000,000. Alexander Potter, 50 Church St., New York 7, N. Y., engr. CD 1/15.

▲ **Mass., Worcester**—GYMNASIUM—BA 2/15—State, Dpt. Educ., c/o Div. Bldg. Constr., 38 Chauncy St., Boston, E-802, gymnasium and library State Teachers College. $1,618,800. Plans deposit $100, refundable. Isidor Richmond & Carney Goldberg, 16 Arlington St., Boston, archts. CD 5/2/55.

BUILDINGS—LB & CA

▲ **Anthony P. Miller**, 3333 Arctic Ave., Atlantic, N. J. LB **$1,722,503**, est. $2,000,000. Capehart family HOUSING on-site work at Swansea, Rehoboth, Topsfield, Beverly, Randolph, Bedford and Hull, ENG-19-016-57-32, MASSACHUSETTS. U. S. Eng., 150 Causeway St., Boston, Mass. Bids Jan. 23. CD 1/3.

▲ **Kay-Vee Homes, Inc.**, 1160 Bay St., Springfield, Mass. Owner Builds. Approx. **$1,500,000**. RESIDENTIAL DEVELOPMENT, 100 houses, SPRINGFIELD, MASS.

▲ **W. J. Megan, Inc.**, 51 Elm St., Naugatuck, Conn., CA Est. **$3,000,000**. 350,000 sq. ft. PAPER PLANT NEW MILFORD, CONN. Kimberly-Clark Paper Co., 128 N. Commercial St., Neenah, Wis. Bids Jan. 7. CD 1/4.

MIDDLE ATLANTIC

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
BRIDGES
February 5 Maryland — February 21 Pennsylvania
STREETS AND ROADS
February 21 Pennsylvania

HEAVY CONSTRUCTION—LB & CA

▲ **Gramercy Constr. Co.**, 114 Liberty St., New York, N. Y. LB **$1,282,882**. (4 bidders). Contr. NA-380.003 constr. superstructure for Hangar No. 14 at Newark Airport, NEWARK, N. J. Office of the Chief E,ngineer of Port of New York Auth., 111 Eighth Ave., New York 11, N. Y. Bids Jan. 22. CD 12/18.

▲† **American Dredging Co.**, 12 S. 12 St., Phila., Pa. LB **$3,151,350**. dredging Delaware River, Phila. Co., ENG-36-109-57-41, PENNSYLVANIA. U. S. Eng., 2635 Abbottsford Rd., Phila., Pa. Bids Dec. 27. CD 12/12.

▲† **Wark Co.**, 1920 Sansom St., Phila., Pa. CA **$5,798,900**. air reserve flying center, NBy 8886, WILLOW GROVE, PA. Dpt. Navy, Phila. Naval Base, Phila., Pa. CD 12/26, under LB.

BUILDINGS—LB & CA

▲ **Geiger, Lunde & Geiger**, Higbe Lane, West Islip, N. Y. CA Est. **$1,600,000**. 100 HOUSES on 53 acre tract at Deer Park Ave. and Scott St., BABYLON, N. Y. Babylon Gardens Homes, c/o contractor.

▲† **Bonwit Constr. Co.**, 370 Lexington Ave., New York 17, N. Y. LB **$1,089,421** (13 bidders) field maintenance shop, BELLMORE, N. Y. U. S. Eng., 111 E. 16 St., New York 3, N. Y. Bids Jan. 22. CD 12/28.

▲ **John W. Cowper Co.**, Sidway Bldg., Buffalo, N. Y. CA **$2,200,000**. 337,000 sq. ft. WAREHOUSE, opposite Buffalo Municipal Airport CHEEKTOWAGA, N. Y. Loblaw, Inc., 678 Bailey Ave., Buffalo, N. Y. CD 1/9.

▲ **Glenwood Oaks Homes**, c/o Arthur Simensky, 1185 Harbor Rd., Hewlett Harbor, N. Y. Owner Builds. **$2,000,000**. 81 HOUSES on Duck Pond Rd., east of Welletts Dr., GLEN COVE, N. Y.

▲ **Vermilya-Brown Co., Inc.**, 100 E. 42 St., New York 17, N. Y. CA **$2,000,000**. RESEARCH BLDG., 537-445 E. 71 St., NEW YORK, N. Y. New York Society for Relief of Ruptured & Crippled, 535 E. 70 St., New York, N. Y. CD 7/6.

▲ **Caristo Constr. Corp.**, 105 Court St., Brooklyn 2, N. Y. LB **$2,235,000**. (9 bidders) general constr. JUNIOR HIGH SCHOOL 194, 17 Ave., 17 Rd., 154 to 157 St., Queens Boro, WHITESTONE, N. Y. Director Bureau Constr., 42-15 Crescent St., Long Island City 1, N. Y. Bids Jan. 22. CD 12/27.

▲ **H. R. H. Constr. Corp.**, 16 W. 46 St., New York 19, N. Y. LB **$4,782,000**. (8 bidders) general constr. 5 INFIRMARY BLDGS., KITCHEN BLDG., BLDGS. 12, 14, 16, 17, 26 and 28, at Willowbrook State School, WILLOWBROOK, N. Y. Bureau Contracts & Accounts, The Gov. Alfred E. Smith State Office Bldg., Albany, N. Y. Bids Jan. 17. CD 4/27/56, under LB.
Afgo Engineering Corp., 475 Adelphi St., Brooklyn 17, N. Y. LB **$655,000** (3 bidders) heating work (Willowbrook, N. Y.);
Abraham Newmeyer, 211-13 Jamaica Ave., Jamaica, N. Y. LB **$358,500**. (8 bidders) plumbing work (Willowbrook, N. Y.);
Davidson Electric Co., Inc., 1265 Atlantic Ave., Brooklyn 16, N. Y. LB **$396,700**. (8 bidders) electrical work (Willowbrook, N. Y.)

▲ **Haddonfield Manor Homes**, c/o Rudolph L. Novak, archt., 713 Main Ave., Clifton, N. J. Owner Builds. **$1,600,000**. 52 HOUSES, Grove St. and Haddonfield Rd. CLIFTON, N. J.

▲ **Bryan Constr. Co.**, 171 River Rd., North Arlington, N. J. LB **$1,245,000**. general constr. REGIONAL HIGH SCHOOL, Morris Ave., DENVILLE, N. J. Diocese of Paterson, Chancery Office, 24 DeGrasse St., Paterson, N. J. CD 6/5.

▲ **Spad Builders**, 309 Willow Ave., Scotch Plains, N. J., Owner Builds. **$2,500,000**. 150 HOUSES on Sussex Turnpike, LEDGEWOOD, N. J. William W. Vandercloute, 8 South Ave. W, Cranford, N. J., archt.

▲ **Dick Corp.**, Rte. 51, Large, Pa., LB **$2,222,222**. 5 story, bsmnt., 321x42 ft., 128x34 ft., brick, block HOSPITAL and HOME FOR AGED, BEAVER, PA. Comrs. Beaver Co., Court House, Beaver, Pa. Bids Jan. 10. CD 12/13.

▲ **Dick Corp.**, Rte. 51, Large, Pa. CA **$1,342,063**. general constr. Baldwin High SCHOOL addn., Whitehall Boro, PITTSBURGH, PA Baldwin Twp. School Dist., Whitehall Boro, Pittsburgh, Pa. CD 12/20, under LB.

▲ **R. S. Noona, Inc.**, 26 N. Duke St., York, Pa. CA **$1,500,000**. RESEARCH REACTOR and RADIOACTIVE MATERIALS LABORATORY BLDG., QUEHANNA, PA. Curtiss-Wright Corp., Research Division, Quehanna, Pa. Ralph M. Parsons Co., 617 S. Olive St., Los Angeles, Calif., archt.-engr. CD 8/10, under Pa., Clearfield.

▲ **John K. Ruff, Inc.**, 3010 Ridgewood Ave., Baltimore 15, Md. LB **$1,749,700**, Base Bid. (7 bidders) stone, brick, concrete steel INSTITUTE for Criminal Insane, JESSUP, MD. State Dpt. Pub. Imprvts., 506 Park Ave., Baltimore 1, Md. Bids Jan. 15. CD 1/4.

▲ **John E. Healey & Sons, Inc.**, 707 Tatnall St., Wilmington, Del. CA **$1,139,000**. JUNIOR HIGH SCHOOL, MARSHALLTON, DEL. Marshallton, Del. School Dist., Marshallton, Del. Bids Jan. 3. CD 12/13.

▲ **Thompson Constr. Co.**, 429 Delaware Ave., Camden, N. J. CA **$1,049,828**. Sussex HALL addn. and an extension to Brown HALL for men, NEWARK, DEL. University of Delaware, Newark, Del. Bids Dec. 20, awarded Jan. 15. CD 12/27, under LB;
J. A. Bader & Co., Inc., 923 Market St., Wilmington, Del. CA **$1,136,000**. constr. new facilities on east campus which are slated to house students (Newark, Del.).

SOUTH

HEAVY CONSTRUCTION—BA

▲† **La., New Iberia**—BARRACKS—BA 2/19—Eighth Naval Dist., Bldg. 16, U. S. Naval Station, New Orleans, enlisted men's barracks at U. S. Naval Auxiliary Air Station, NBy 6405, $1,000,000-$1,500,000. Plans deposit $70. CD 9/28.

BUILDINGS—BA

▲ **La., Plaquemine**—PLANT—BA 2/5—Dow Chemical Co., Commerce Bldg., Baton Rouge, constr. 8 bldg. projects at plant (1) vinyl chlorine unit control house (2) chlorinated solvents unit control house, (3) light hydrocarbon unit control house (4) drum loading and storage bldg. (5) electrical distribution bldg. (6) Electrical Distribution Bldg. No. 3620 (7) Electrical Distribution Bldg. No. 3820 (8) water treatment plant control bldg., Total est. $50,000,000, Bodman, Murrell & Smith, 1175 Nicholson Dr., Baton Rouge, archts. CD 9/26/56.

▲ **La., Fort Polk**—OFF-SITE FACILITIES—BA 2/13—U. S. Eng., Box 1229, Galveston, Tex., off-site facilities for Capehart Housing, 2,000 units. Inv. 57-21. $1,000,000. CD 1/17, under Unclassified.

▲ **Fla., Fort Lauderdale**—GERIATRICS—BA 2/21—Bd. Comrs. State Institutions, Tallahassee, 2 geriatrics buildings South Florida State Hospital, Plans deposit $50. Gamble, Pownall & Gilroy, 1407 E. Las Olas Blvd., archts. CD 1/9, under LB.

▲ **N. C., Goldsboro**—HOUSING—BA 3/5—Base Procurement Office, Building 905, Seymour Johnson Air Force Base, Goldsboro, construct and finance, 1,500 unit Capehart housing, Seymour Johnson Air Force Base. ENG-31-610-57-57. $1,500,000. Plans deposit $100. J. N. Pease & Co., Box 10336, Charlotte, archts. CD 3/13.

▲ **S. C., Myrtle Beach**—HOUSING—BA About 3/12—Base Procurement Office, Myrtle Beach Air Force Base, Myrtle Beach, construct and finance, 800 units, Capehart housing. IFB 38-606-57-27. Plans deposit $100. CD 2/8.

HEAVY CONSTRUCTION—LB & CA

▲ **TENNESSEE**—State Hy. Dpt., Nashville,

Tenn.—**Anderson-Gregory**, Sudekum Bldg., Nashville, Tenn. LB **$151,528**, crushed stone and bit. materials surf. 4.226 mi. sect. Secondary Rte. 2532, Proj. S-2532-(1), Knox Co.; LB **$486,201**, crushed stone base, concrete curb, gutter, sidewalks, bit. materials paving, constr. one concrete deck girder bridge 1.09 mi. on relocated State Rte. 30 in Athens, Proj. U-039-1-(8), McMinn Co.;

Tenn.—**Asphalt Paving Co.**, 316 Quincy Ave. N.W., Nashville, Tenn., LB **$92,334**, bit. materials surf. 7.095 mi. Sect. Secondary Rte. 2343. Proj. S-2343-(2); bit. materials surf. 7.791 mi. sect. Secondary Rte. 2438, Proj. S-2438-(2), Morgan Co.;

Tenn.—**W. T. Cutchins, Sr.**, Dyersburg, Tenn., LB **$267,111**, grav. or chert surf., constr. five bridges, 3.201 mi. Rte. 8011. Proj. S-8011-(3), Weakeley Co.;

Tenn.—**Gallatin Paving Co.**, Gallatin, Tenn., LB **$75,432**, bit. materials surf. 3.231 mi. sect. Secondary Rte. 8059, Proj. S-8059-(8); bit. materials surf. 8.227 mi. sect. Secondary Rte. 8060, Proj. S-8060 (3), Chester and Henderson Counties;

Tenn.—**T. E. Gillespie & Glen Bland**, Lebanon, Tenn. LB **$191,948**, grading, drainage, constr. two concrete box type bridges, 7.208 mi. relocated State Rte. 22, Proj. F-022-1-(2), Pt. I, Weakley Co.;

Tenn.—**Hardrives, Inc.**, 900 44th Ave. N., Nashville, Tenn. LB **$81,936**, bit. materials surf. 7.611 mi. sect. Secondary Rte. 8024, Proj. S-8024-(7), bit. materials surf. 6.916 mi. sect. Secondary Rte. 8038, Proj. S-8038 (4), Carroll Co.;

Tenn.—**J. H. Hood**, Bell Buckle, Tenn., LB **$131,865**, crushed stone surf. 4.784 mi. sect. Secondary Rte. 2535, Proj. S-2535-(1), Jefferson Co.;

Tenn.—**Malone Brothers**, Greeneville, Tenn., LB **$263,436**. crushed stone, surf., constr. one concrete box type bridge 5.556 mi. sect. Secondary Rte. 2486, Proj. S-2486 (1), Cocke Co.;

Tenn.—**McDowell & McDowell**, Murfreesboro Rd., Nashville, Tenn., LB **$116,858**, crushed stone surf., constr. one concrete box type bridge, 2.719 mi. sect. Secondary Rte. 2537, Proj. S-2537-(1), Sullivan Co.;

Tenn.—**Mid-Tennessee Paving Co.**, Dickson, Tenn. LB **$77,962**, bit. materials surf. 14.738 mi. sect. Secondary Rte. 6148, Proj. S-6148 (11), Williamson Co.;

Tenn.—**Oman Constr. Co.**, Acklen Park, Nashville, Tenn. LB **$1,167,981**, crushed stone and bit. materials surf., constr. bridge over Clinch River 3.591 mi. sect. Secondary Rte. 2474, Proj. S-2474 (1), Anderson Co.;

Tenn.—**Summers, Taylor Paving Co.**, Elizabethton, Tenn. LB **$176,343**, crushed stone surf., constr. one concrete box type bridge 4.556 mi. sect. Secondary Rte. 2461 Proj. S-2461 (5), Johnson Co.;

Tenn.—**Warren Brothers**, 1900 Hayes St., Nashville, Tenn., LB **$686,884**, wid'n and resurf. with bit. materials 22.445 mi. sect. State Rte. 18, Proj. SP-1198-A, Hardeman and Madison Counties;

Tenn.—**M. C. West**, Columbia, Tenn., LB **$213,172**, crushed stone and bit. materials surf., constr. concrete deck girder overhead bridge over L & N RR at Godwin 2.557 mi. sect. State Rte. 7, Proj. SP-1196-A, Maury Co. Bids Jan. 18. CD 1/4.

BUILDINGS—LB & CA

▲ **Virginia Engineering Co., Inc.**, 80 29th St., Newport News, Va., LB **$3,730,000** (11 bidders) 6 story, 200-bed general medical and surgical HOSPITAL, HAMPTON, VA. Hampton Training School for Nurses, Inc., Hampton, Va. Marcellus Wright & Son, 100 E. Main St., Richmond 19, Va., archts. Vincent G. Kling, 917 Corinthian Ave., Phila. 30, Pa., assoc. archt. Wiley & Wilson, 711 W. Main St., Richmond, Va., consult. engrs.

▲† **Little Constr. Co.**, P. O. Box 1053, Charlotte, N. C. CA **$1,932,850**, modifications and alterations to BARRACKS, Marine Corps Base, NBy 3564, CAMP LEJEUNE, N. C. P. Wks. Office, Fifth Naval Dist., U. S. Naval Base, Norfolk 11, Va. Bids Dec. 18, awarded Jan. 16. CD 9/22/55.

▲ **Butler & Oenbrink, Inc.**, 207 Royal Palm Way, Palm Beach, Fla. CA **$1,115,000**. co-op APARTMENT, Lake Dr. between Australian and Chilian, PALM BEACH, FLA. Park Place Apartments, c/o Howard Chilton, archt., 446 Brazilian Ave., Palm Beach, Fla. CD 12/27, under LB.

▲ **Southern Constr. Co.**, Old Savannah Rd., Augusta, Ga. CA **$1,630,942**. constr. 100 HOUSING UNITS for military personnel at Ft. McClellan in two and three bedroom units, FORT McCLELLAN, ALA. U. S. Eng., 2301 Grant St., Mobile 7, Ala. Bids Dec. 6. CD 12/27, under LB.

▲† **Jordan Co.**, P. O. Box 1179, Columbus, Ga., LB **$1,663,000**. (5 bidders) addns., alterations to BUILDINGS and UTILITIES at Veterans Admin. Hospital Second Phase, TUSKEGEE, ALA. Veterans Admn., Munitions Bldg., Wash., D. C. Bids Jan. 22. CD 12/14.

▲ **Foster Wheeler Corp.**, 165 Broadway, New York 6, N. Y. CA Est. **$17,000,000**. butyl rubber PLANT, LAKE CHARLES, LA. Petroleum Chemical, Inc. (Cities Service Co. and Continental Oil Co.), Lake Charles, La.

▲ **W. E. Robertson Co.**, 4015 W. Jefferson St., Los Angeles, Calif. CA Approx. **$26,900,000**. construct and finance HOUSING (Capehart), ENG-15-029-56-87, FORT KNOX, KY. U. S. Eng., 830 W. Broadway, Louisville, Ky. CD 11/12, under LB.

MIDDLE WEST

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS
STREETS AND ROADS
February 6 Michigan

▲ **Ill., Chicago**—BA 2/6—City, City Hall, Sec. 1-C-4, main ramps into Michigan Ave. and Indiana Ave. from E. 61st to S. Lawrence Ave. $3,000,000. DeLeuw, Cather & Co., 150 N. Wacker Dr., co-or. engr. Friedman, Kornacker Eng. Co., 53 W. Jackson St., sec. engrs.

BUILDINGS—LB & CA

▲ **The Austin Co.**, 16112 Euclid Ave., Cleveland 12, O. CA Est. **$1,400,000**. design and construct 60,000 sq. ft. porcelain PLANT; 2 story, 50,000 sq. ft. ADMINISTRATION BLDG., MARION, O. Marion Div., Whirlpool-Seeger Corp., Marion, O.

▲ **American Bridge Div., U. S. Steel Corp.**, Ambridge, Pa., CA. structural steel for Hulett ORE UNLOADER at Gary Works, GARY, IND. Total est. **$1,500,000**. United States Steel Corp., 71 Broadway, New York,

N. Y. Wellman Eng Co., 7000 Central Ave., Cleveland 4, O., engr. Awarded Jan. 18. CD 1 19.
Wellman Eng. Co., 7000 Central Ave., Cleveland 4, O., CA mechanical components (Gary, Ind.).
McDowell Co., Inc., 3203 W. 71 St., Cleveland, O. CA. installation and delivery (Gary, Ind.).

▲ **Foster Wheeler Corp.**, 165 Broadway, New York 6, N. Y., CA **$39,500,000**. 1,780,000 lb per hr. STEAM GENERATING 5th unit for Oak Creek Station, MILWAUKEE, WIS. Wis. Electric Power Co., 231 W. Michigan Ave., Milwaukee, Wis. CD 12 27.

▲ **Siesel Constr. Co.**, 514 E. Odgen Ave., Milwaukee, Wis. CA **$3,512,747**. general constr. and interior finishing work for MUNICIPAL BLDG. and GARAGE, MILWAUKEE, WIS. City, City Hall, Milwaukee, Wis. CD 12 31, under LB.
Magaw Electric Co., 728 N. Jefferson St., Milwaukee 2, Wis. CA **$991,510**. electrical work (Milwaukee, Wis.).

WEST OF MISSISSIPPI

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

February 5 Iowa. February 13, 14 Texas

STREETS AND ROADS

February 5 Iowa. February 7 Kansas
February 13, 14 Texas

▲† **Tex., Austin**—RUNWAYS, TAXIWAYS—BA 2 26—U. S. Eng., 100 W. Vickery Blvd., Fort Worth, runways, taxiways, paving, grading drainage sewers, etc. Bergstrom Air Force Base. $15,000,000. Lockwood, Andrews & Newnam, Union Natl Bank Bldg. Houston, engrs. CD 8 21.

BUILDINGS—BA

▲ **Tex., El Paso**—HOUSING—BA About 3 28—U. S. Eng., Box 1538, Albuquerque, N. M., construct and finance, 490-unit frame masonry Capehart housing. $5,000,000-$10,000,000. CD 1 11, under LB.

HEAVY CONSTRUCTION—LB & CA

▲ **TEXAS**—State Hy. Dpt., Austin,
Tex.—**T. M. Jr. & Don Brown**, 1518 Ballinger St., Abilene, Tex., LB **$265,754**, grading, structures, base and surf. 13.318 mi. Hy. FM 644 and 1808. Proj. S 1312 (2), Mitchell Co.;
Tex.—**Cooper & Woodruff, Inc.**, 204 Mays Bldg., Amarillo, Tex., LB **$479,709**, flexible base, hot mix b. conc. 14.689 mi. Hy. US 83. Proj. F 90 (11), Taylor Co.; LB **$896,695**, flexible base, hot mix b. conc. 9.033 mi. Hy. US 80. Proj. I 525 (6), Mitchell Co.;
Tex.—**Joe Davidson**, P. O. Box 439, Terrell, Tex., LB **$86,073**, grading, structures, base, surf. 2.524 mi. Hy. FM 1143, Proj. R 1290-4-1, Rockwall Co.;
Tex.—**J. M. Dellinger**, Box 4227, Corpus Christi, Tex. LB **$498,812**, flexible base and b. conc. 2.111 mi. Hy. US 281. Proj. 1099 (4), Live Oak Co.;
Tex.—**Fred Hall & Son**, Box 488, Valley Mills, Tex., LB **$352,307**, flexible base, b. conc. 8.275 mi. Hy. SH 29. Proj. F 257 (8), Williamson Co.;
Tex.—**Harrison Eng. & Constr. Corp.**, 3706 Broadway, Kansas City, Mo. LB **$1,006,592**, c. conc. 4.935 mi. Hy. SH 6. Proj. F 471 (20), Brazos Co.;
Tex.—**E. E. Hood & Sons**, P. O. Box 6097, San Antonio, Tex. LB **$100,402**, grading, structures, base, surf. 5.113 mi. Hy. FM 1892. Proj. R-1899-2-1, Kendall Co.; LB **$302,182**, foundation course and b. conc. 9.937 mi. Hy. US 87. Proj. F 631 (11), Gillespie Co.;
Tex.—**Kerr & Middleton**, Box 5065, Lubbock, Tex., LB **$73,863**, grading, structures, base, surf. 12.384 mi. Hy. FM 1073 and 2081. Proj. C 880-6-2, R 2184-1-1, Lynn Co.; LB **$264,683**, grading, structures, flexible base, three course surf. tr. 11.606 mi. Hy. SH 116. Proj. C 130-2-8, Cochran Co.;
Tex.—**Killian-House Co.**, 4600 Broadway, San Antonio, Tex., LB **$79,422**, flexible base, two course surf. 1.586 mi. Hy. Access Road (A AD 12 (2), Bexar Co.;
Tex.—**Luce Constr. Co. & N. F. Bradley**, P. O. Box 1799, Vernon, Tex., LB **$178,203**, grading structures, base, surf. 7.064 mi. Hy. FM 1041, Proj. S 1358 (2), Hall Co.;
Tex.—**McMillan-Burkett Constr.**, Box 1161, Texarkana, Tex., LB **$340,231**, grading extend structures, flexible base, b. conc. 11.643 mi. Hy. SH 11. Proj. C 83-4, 5 and 6-9, 5 & 16, Hopkins, Franklin and Wood counties;
Tex.—**L. W. Pelphrey**, P. O. Box 951, Gladewater, Tex., LB **$84,792**, grading, structures, base, surf. 4.822 mi. Hy. FM 2199, Proj. R 843-9-2, Harrison So.;
Tex.—**Dan Pennington**, Box 13, Grapeland, Tex., LB **$199,123**, grading structures, base, surf. 15.849 mi. Hy. RM 2338, Proj. R 2211-1-1, Williamson Co.;
Tex.—**Jeff Richards**, 515 Hackberry St., Clifton, Tex., LB **$264,683**, seal coat 248.852 mi. Hys. US 84, SH 22, 36, 6, 317, FM 1114, 107, 67, 116, 1602, 1048, 308, 1238, 1950, 1245, 182, 1113, 1633 and 1741, Coryell, Limestone, Hamilton, Bosque, McLennan, Hill and Falls Counties;
Tex.—**Dean Skinner**, Box 4057, Austin, Tex., LB **$485,657**, reconstr. and widen grading, structures and surf. 11.805 mi. Hy. SH 71 and US 77. Proj. 417 (9) and F 285 (2), Colorado and Fayette Counties;
Tex.—**South Texas Constr. Co.**, Box 3536, Corpus Christi, Tex., LB **$186,201**, foundation course and b. conc. 9.707 mi. Hy. US 77, Proj. F 1042 (2), Lee Co.;
Tex.—**Trinity Constr. Co., Inc.**, P. O. Box 3024, Houston, Tex., LB **$398,322**, grading, structures, base surf. 11.477 mi. Hy. FM 1008. Proj. R 952-1-6 and R 953-1-3, Liberty Co.;
Tex.—**Trotti & Thomson, Inc.**, P. O. Box 70, Beaumont, Tex., LB **$1,563,132**, c. conc. 1.188 mi. Hy. US 90. Proj. I 56 (14) Jefferson Co.;
Tex.—**Uvalde Constr. Co.**, P. O. Box 10286, Dallas, Tex. LB **$517,010**, c. conc. pavement, flexible base shoulders and hot mix b. conc. pavement 3.575 mi. Hy. US 77. Proj. I 117 (11), Denton Co. Bids Jan. 22. CD 12 31.

▲† **Standard Dredging Corp.**, 580 Broad St., New York, N. Y., LB **$1,252,055**. dredging, Port Aransas-Corpus Christi Waterway, Harbor Island to Beacon No. 19, Corpus Christi, Nueces Co., TEXAS. U. S. Eng., 606 Santa Fe Bldg., Galveston, Tex. Bids Jan. 11.

▲ **NEW MEXICO**—State Hy. Dpt., State Hy. Bldg., Cerrillos Rd., Sante Fe,
Brown Constr. Co., 3525 Fourth St. N.W., Albuquerque, N. M. CA **$1,558,595**. road forks—west Proj. I-092-1 (3), Hidalgo Co.; CA **$2,059,515**. Hidalgo-Grant County Line—east Proj. I-092-1 (4), Hidalgo and Grant Counties. CD 12 19, under LB.

BUILDINGS—LB & CA

▲ **General Services Admin.**, 2306 E. Bannister Rd., Kansas City, Mo., rejected bids Dec. 20, POST OFFICE and FEDERAL BLDG., BURLINGTON, IOWA. LB **$1,259,800**. CD 12 28, under LB.

▲ **General Services Admin.**, 2306 E. Bannister Rd., Kansas City, Mo., rejected bids Dec. 28, POST OFFICE and COURTHOUSE, COUNCIL BLUFFS, IOWA. LB **$1,690,630**. CD 1/4, under LB.

▲ **J. E. Dunn Constr. Co.**, 929 Holmes St., Kansas City, Mo. CA **$1,231,052**. general constr. four 4 story, 38x115 ft. DORMITORIES, 2 story, 101x191 ft. CAFETERIA and SERVICE CENTER, being south group on Hitt St., COLUMBIA, MO. Curators of University of Missouri, Dale O. Bowling, bus. mgr., Columbia, Mo. Bids Dec. 11, awarded Jan. 16;
J. Louis Crum, Boone Bldg., Columbia, Mo. CA **$638,876**. (Columbia, Mo.). plumbing and heating work.

▲ **General Services Admin.**, 2306 E. Bannister Rd., Kansas City, Mo. rejected bids Dec. 20. POST OFFICE and COURT HOUSE, KANSAS CITY, KAN. LB **$2,383,000**. CD 12 27, under LB.

▲ **C. E. Vollmer Constr. Co.**, 840 N. Main St., Wichita, Kan. LB **$1,016,990**. general constr. W. S. Hadley Intermediate SCHOOL, WICHITA, KAN. Bd. Educ., 428 S. Broadway, Wichita, Kan. Bids Jan. 10. CD 11 21.

▲ **Tuloma Builders, Inc.**, 8502 E. 41 St., Tulsa, Okla. CA Est. **$1,750,000**, natural gasoline PLANT, MOORE, OKLA. Continental Oil Co., P. O. Box 2197, Houston, Tex.

▲ **Hoke Constr. Co.**, Stillwater, Okla. CA **$1,773,702**, family rental APARTMENTS, STILLWATER, OKLA. Oklahoma Agricultural & Mechanical College, Stillwater, Okla. CD 12/31, under LB.

▲ **General Services Admin.**, Denver Federal Center, Denver, Colo., rejected bids Dec. 20 federal OFFICE, ALBUQUERQUE, N. M. LB **$5,538,840**. CD 12/27, under LB.

FAR WEST

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

BRIDGES

February 13 California

STREETS AND ROADS

February 13 California

▲† **Calif., Long Beach**—SUBSIDENCE REMEDIAL MEASURES—BA 2 26—Eleventh Naval Dist., 1220 Pacific Hy., San Diego, subsidence remedial measures, Naval Shipyard, NBy 4182, Spec. 4182 56. $2,500,000. Plans deposit $250. CD 8/27.

BUILDINGS—BA

▲ **Calif., Anaheim**—HIGH SCHOOL—BA 2 8—Anaheim School Dist., Anaheim, 78,200 sq. ft. Junior High School No. 3. $1,250,000. Plans deposit $50. Smith, Powell & Morgridge, 208 W. 8th St., Los Angeles, archts. CD 11 20.

▲ **Calif., Ventura**—HIGH SCHOOL—BA 2/13—Ventura Union High School Dist., 295 Arcade Dr., wood frame, brick veneer Avenue Junior High School. $2,500,000. Plans deposit $25. Kenneth H. Hess, 620 E. Main St., archt. CD 5/15.

▲ **Calif., Del Paso Heights**—ADMINISTRATION—BA 2 19—American River Junior College Dist., c/o Supt., 1333 Grand Ave., 1 story tilt up concrete, wood frame administration bldg., science mathematics, engineering bldg. and liberal arts bldg. $1,270,000. Barovetto & Thomas, 718 Alhambra Blvd., Sacramento, archts. CD 5 28.

BUILDINGS—SLC

▲ **Calif., Fresno**—HOSPITAL—Fresno Community Hospital, 1234 S St., soon lets contract 4 story bsmnt., 128,000 sq. ft. 243- bed steel frame, concrete hospital addn. $3,500,000. Alastair Simpson, 64 N. Fulton St., archt. CD 8/19 55.

▲ **Calif., Palo Alto**—INN—John Rickey, 4219 El Camino Real, soon lets contract 6 story rein.-con. Rickey's Studio Inn addn., swimming pool. $1,000,000. Ernest J. Kump, 450 Ramona Ave., archt. CD 10 30.

▲ **Calif., San Francisco**—WAREHOUSES, etc.—Eastman Kodak Co., 241 Battery St., soon lets contract 3 story, approx. 170,000 sq. ft., structural steel, warehouses and office bldg. $2,225,000. Kitchen & Hunt, 525 Market St., archts. CD 8 8.

HEAVY CONSTRUCTION—LB & CA

▲† **D. M. Drake Co.**, 1600 N.W. Savier St., Portland, Ore. LB **$2,036,476**, est. $1,976,546 (5 bidders), hospital bldg. and utilities at Air Force Base, ENG-45-164-57-11, MOUNTAIN HOME, IDAHO. U. S. Eng., City-County Airport, Walla Walla, Wash. Bids Jan. 15. CD 12/12.

▲† **Kiewit-Judson Pacific Murphy**, 1322 East Shore Hy., Emeryville, Calif., CA **$4,139,277**, steel arch bridge across Colorado River; Glen Canyon Dam, Colorado River Storage Proj. near Lees Ferry, Ariz., DC-4800, ARIZONA-UTAH. Bureau Reclamation, Dpt. Interior, Kanab, Utah. Bids Dec. 18. CD 12 21, under LB.

▲ **M. J. Kuney**, N. 120 Ralph St., Spokane, Wash. CA **$1,830,750**. treatment plant with screen and chlorine bldg., grit chamber bldg., sludge control bldg. and sludge pumping bldg., SPOKANE, WASH. City, City Hall, Spokane, Wash. CD 1 15, under LB.

BUILDINGS—LB & CA

▲ **H. Valle Co.**, 407 Third Ave. W., Seattle, Wash. CA **$2,744,342** (4 bidders) general contract 175,000 sq. ft. rein.-con. St. Thomas SEMINARY, KENMORE, WASH. Archdiocese of Seattle, 904 Terry Ave., Seattle, Wash. Bids Dec. 18. CD 12 12.

▲ **Stigelbauer Constr. Co.**, 8148 E. Phlox St., Downey, Calif., LB **$1,026,151** (11 bidders) Downey HIGH SCHOOL, DOWNEY, CALIF. Downey Union High School Dist., 8521 E. Firestone Blvd., Downey, Calif. Bids Jan. 22. CD 1 8.

▲ **O. L. Carpenter, Contractor**, P. O. Box 206, Lemon Grove, Calif., CA **$1,719,310**, HIGH SCHOOL, GROSSMONT, CALIF. Grossmont Union High School Dist., Grossmont High School, Grossmont, Calif. Bids Nov. 29. CD 12 7, under LB.

▲ **Pacific Coast Builders**, 1 South Park St., San Francisco, Calif., LB **$2,971,000**, Tennyson HIGH SCHOOL, HAYWARD, CALIF. Hayward Union High School Dist., 22300 Foothill Blvd., Hayward, Calif. CD 11 7, under LB.

▲ **Morley Building Co.**, 7700 Sunset Blvd., Los Angeles 46, Calif., CA **$1,410,000**. LIBRARY and CLASSROOM BLDG. for Francis Polytechnic High School, LOS ANGELES, CALIF. Bd. Educ., 1425 S. San Pedro St., Los Angeles, Calif. Bids Nov. 21, awarded Nov. 26. CD 12 4, under LB.

▲ **Pacific Coast Builders**, 1 South Park St., San Francisco, Calif., CA **$1,756,250**. HIGH SCHOOL BLDGS., Woodside Rd. and Alameda de las Pulgas, near REDWOOD CITY, CALIF. Sequoia Union High School Dist., Broadway and El Camino Real, Redwood City, Calif. Bids Jan. 8. CD 1/18, under LB.

▲ **Crown Constr. Co.**, 5059 W. Pico Blvd., Los Angeles 19, Calif., CA **$1,552,000**, South Torrance HIGH SCHOOL, TORRANCE, CALIF. Torrance Unified High School Dist., 2335 Plaza Del Amo, Torrance, Calif. Bids Nov. 30. CD 12 10, under LB.

CANADA

HEAVY CONSTRUCTION—BA

STATE HIGHWAY LETTINGS

STREETS AND ROADS

February 6 Ontario February 19 Saskatchewan

▲† **Labrador, Goose Bay**—AMMUNITION STORAGE, etc.—BA 2 8—U. S. Eng., c/o USAAF NE Command, Subheadquarters, Pepperell Base near St. Johns, Newfoundland, constr. ammunition storage bldg., dormitory, elementary school, NCO mess, family housing, dental clinic, commissary, hangar, utilities, etc. $25,000,000.

BUILDINGS—BA

▲ **Que., Baie Comeau**—HOUSES—BA 3 2—Canadian British Aluminum Co., Ltd., 1980 Sherbrooke St., Montreal, 205 houses. $1,000,000. Plans deposit $50. Edouard Fiset of Fiset & Deschamps, 604 St. Jean St., Quebec City, archts. CD 12 6 55, under Industrial Buildings.

BUILDINGS—LB & CA

▲ **Coles-Jeffrey Constr. Ltd.**, 1255 Yonge St., Toronto, Ont., Total est. **$1,600,000**. 6 story, bsmnt., T-shaped, 50x133 ft. with 50x80 ft. Hayden St. Wing, Grace Hospital, 133 Bloor St., TORONTO, ONT. Salvation Army of Canada, 20 Albert St., Toronto, Ont. Bids Nov. 9, awarded Jan. 14. CD 10 16.

▲ **Eastern Constr. Co., Ltd.**, Box 96, Walkerville, Ont. CA Est. **$2,500,000**. superstructure for 1 story, 250,000 sq. ft. steel frame, steel mfg. PLANT, TORONTO, ONT. Canadian Steel Corp., Ltd., Ojibway, Ont. Bids Jan. 15, awarded Jan. 17. CD 12 31.

▲ **Les Chantiers Cooperatifs Notre-Dame-du-Tres-Saint-Rosaire**, Pointe Gatineau, Que. Owner Builds. **$1,000,000** 100 units HOUSING, 20-acre site, Parish of Notre Dame du Rosaire, POINTE GATINEAU, QUE.

ALASKA

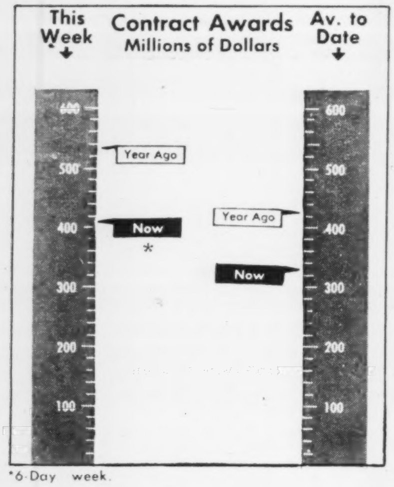
HEAVY CONSTRUCTION—BA

▲† **Alaska**—DEW LINE STATIONS—BA 2 15—U. S. Eng., 4735 E. Marginal Way, Seattle 4, Wash., two new "Dew Line" Stations at Cold Bay and Cape Sarichef for the Air Force, incl. composite bldg., ammunition storage bldg., erect antenna towers, supports for electronic equip., water supply distr., sewers, POL sys., electrical distr., roads and airfields, Inv. 57-58. First Sect. Est. $7,000,000. Total est. $20,000,000.

(Proposal Advertisement see pp. 81 to 83)

Construction Scoreboard

Activity this Week



*6-Day week.

AMOUNT OF CONTRACTS LET

By Ownership	This Week	Cum. 5 wks 1957	Chge %
	millions		
Federal	$29.4	$223.2	+1
State and Municipal	154.4	667.4	+5
Total Public	183.8	890.6	+4
Total Private	223.0	773.1	−39
U. S. Total	$406.8	$1,663.7	−22
By Type of Work			
Waterworks	$4.6	$15.6	−44
Sewerage	14.2	58.1	−51
Bridges	22.6	64.2	+9
Highways	59.3	266.1	+36
Earthwork, Waterways	7.6	124.1	+62
Buildings:			
Public, Excl. Housing	41.6	212.0	−2
Public Housing	10.7	32.2	−16
Private Housing	83.7	327.2	−34
Commercial	17.1	77.2	−72
Industrial	120.4	340.0	−24
Unclassified	25.0	147.0	−15
U. S. Total	$406.8	$1,663.7	−22

NOTE: Minimum size projects included are: Waterworks and waterways, $44,000; other public works, $73,000; industrial buildings, $93,000; other buildings, $344,000.

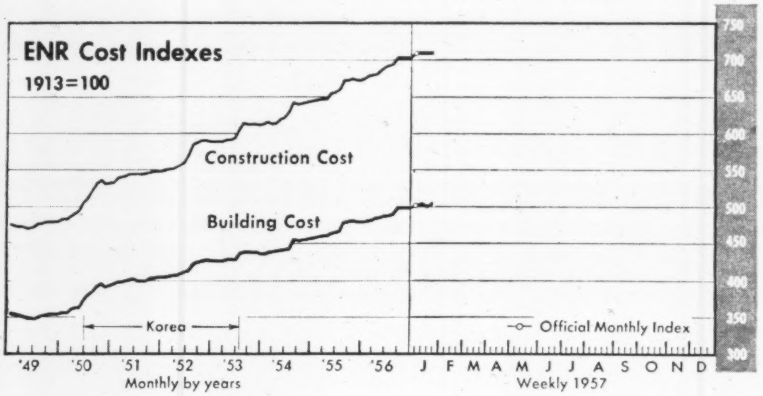
NEW CAPITAL FOR CONSTRUCTION

	Week of Jan. 24	Cum. 4 wks 1957	Chge '56-'57 %
	millions		
Corporate Securities	$81.9	$510.6	+336
State and Municipal:			
All Except Housing	217.7	353.8	+35
Housing	...	....	...
Federal Loans	1.9	10.5	+19
Federal Aid	...	....	...
Total Nonfederal	$301.5	$874.9	+126
Federal Appropriations:			
In U. S.	...	....	...
Outside U. S.	...	....	...
Total New Capital	$301.5	$874.9	+126

Cost Indexes as of Now

ENR INDEXES (1913=100), 20-cities' average	Week of Jan. 24 1957	% Change from Dec. 27 1956	% Change from Jan. 26 1956
Construction Cost	708.80	+0.5	+4.2
Building Cost	502.53	+0.5	+4.0

To convert above indexes to 1926=100: Divide Construction Cost by 2.030; Building Cost by 1.850.
1919=100: Divide Construction Cost by 1.770; Building Cost by 3.518.



BACKLOG OF PROPOSED HEAVY CONSTRUCTION

	Dec. 31 1956 (millions)	Percent Change from last Month	Percent Change from last Year
Total U. S. (ENR reported)	$104,249	+0.3	+12.0
By Ownership—			
Private	43,637	+0.025	+11.5
State & Municipal	46,970	+0.6	+14.1
Federal	13,642	+0.3	+ 7.1
By Type of Work—			
Waterworks	2,229	+0.8	+12.0
Sewerage	3,214	+0.9	+ 7.5
Bridges	2,954	+0.4	+10.1
Highways	12,672	+1.8	+12.0
Earthwork, Waterways	11,416	−0.2	+ 1.1
Public Buildings	18,884	−0.1	+15.1
Industrial Buildings	16,139	−0.1	+12.8
Commercial Buildings	18,210	+0.4	+15.5
Unclassified, Private	9,288*	−0.5	+ 2.4
Unclassified, Public	9,244	+0.9	+27.6
By Regions—			
New England	5,981	−0.2	+18.4
Middle Atlantic	22,005	+0.7	+11.2
South	12,502	+0.2	+ 9.2
Middle West	18,766	−0.05	+13.4
West of the Mississippi	22,856	−1.1	+ 4.0
Far West	22,139	+2.0	+21.3

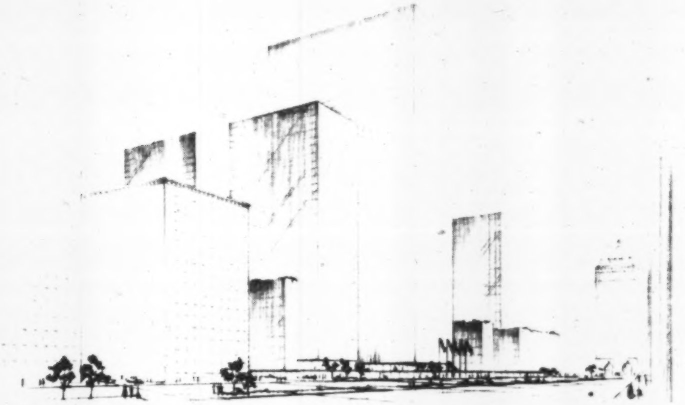
* Includes private bridges, $89 million.

FLOW OF NEW PROJECTS INTO THE BACKLOG

	1956 Dec. (millions)	1956 12-months (millions)	Percent Change from '55 Dec.	Percent Change from '55 Year Cum.
Total U. S. (ENR reported)	$1,753	$25,644	−40.8	+ 6.8
By Ownership—				
Private	846	12,825	−20.0	+ 3.8
State & Municipal	786	10,805	−57.4	− 1.3
Federal	121	2,014	+104.8	+44.1
By Type of Work—				
Waterworks	36	533	−59.1	−10.1
Sewerage	60	623	−39.8	+62.7
Bridges	19	457	−80.3	−32.1
Highways	3	2,351	−99.7	−39.6
Earthwork, Waterways	305	1,079	+496.0	−54.2
Public Buildings	331	4,987	−46.7	+61.9
Industrial Buildings	431	6,018	−22.1	+29.2
Commercial: Mass Housing	130	3,126	−38.9	− 2.6
Other Building	226	2,680	+ 2.0	+12.6
Unclassified, Private	58**	1,001***	−15.8	−30.1
Unclassified, Public	153	2,788	+70.4	+103.7

** Includes private bridges, $4.5 million. ***Includes private bridges, $18.6 million.

This three-block area in mid-Manhattan's Grand Central area . . .



. . . May get one 30-story and four 20-story skyscrapers in a . . .

$100-Million Office Center

New York City's oft-altered skyline (ENR Jan. 17, p. 40) faces another significant change within the next few years—if two railroads can settle a touchy land dispute.

Preliminary negotiations were completed last week for a $100-million, five-skyscraper office center in Manhattan's Grand Central area. The project, planned by the Alfred I. DuPont Estate, of Florida, is the most ambitious office building center in New York since construction of Rockefeller Center.

The new DuPont Center would consist of five buildings providing a total of five million sq ft of air-conditioned office and retail space, covering the entire 5½ acre area bounded by Park and Lexington Avenues and East 46th and 49th Streets.

As conceived by architects for the DuPont Estate, the buildings would be of modern slab tower design, with large landscaped garden areas along most of the Park and Lexington frontages. A main structure, at least 30 stories in height, would be flanked by two 20-story structures on the square block to the north and two similar buildings to the south.

The main 30-story building, which would be started first, would occupy an entire block which now is the site of a 12-story apartment building. This structure would contain 1.5-million square feet of space, making it one of the largest postwar office buildings in New York City.

The two 20-story buildings planned for the block to the north will replace the Park Lane Hotel at 299 Park Ave. and the Barclay Hotel at 48th St. and Lexington Ave.

Two buildings of similar design will be built south of the main 30-story structure. These two will replace the 12-story Grand Central Palace at 480 Lexington and the 21-story office building at 247 Park Ave.

Two new north-south streets, with parking facilities, would be created between both sets of flanking buildings. The plans also call for retail shops to be provided on the street levels of all five buildings.

DuPont interests have said they want to start construction of the first unit as soon as possession of the 277 Park Ave. section is obtained. But, a controversy that involves two main line railroads must be settled first.

The situation is complex. The proposed new center has been under discussion by the DuPont Estate administrators and the real estate firm of Collins, Tuttle & Co., acting as brokers for the New York, New Haven and Hartford Railroad. The New York Central has not yet been formally advised of the plan even though the Central owns the property in question, which it acquired many years ago from a predecessor company, the New York and Harlem Railroad, which held ownership.

When the New York Central began construction of Grand Central Terminal, it sought the New Haven as a partner in the project and as an inducement agreed to surrender half of the revenues from the property, and thereby released half interest in the lease rights, according to a spokesman for the New Haven Railroad.

Why did the New Haven bypass the New York Central in this plan? New Haven officials explain that they felt preliminary negotiations would proceed faster with only one principal involved at the outset. They are convinced that when the deal is officially made to the Central it will accept because of the increased revenues that will accrue to both railroads if the DuPont development materialized.

But if the Central says "no," the project will be stillborn.

(B&F continued on page 74)

Court Test for Bonds

$100-million Kentucky issue awaits test ruling

Kentucky's $100-million road-bond issue violates 11 sections of the state constitution, according to a test suit filed last week.

This is the initiation of a suit testing the validity of the bond act approved by the voters in a Nov. 6 referendum. The bond act ultimately will be reviewed by the Court of Appeals before the bonds are offered for sale in blocks of not less than $5 million.

Proceeds of the bond issue will be used to match federal aid.

Estimates of the first three years of highway construction made possible by the act total $231.6 million.

The bond issue, if sustained in the courts, will be used to:

- Match federal funds, in the ratio of $1 of state money to $9 of federal money, for the 13-year construction of Kentucky's quota of 641 miles in the interstate system.
- Match federal funds for the primary, secondary and urban systems in Kentucky. This would be at the usual ratio of 50-50.

By using bond money for such matching funds, $37 million in state money ordinarily used for matching would be released during the first three years. These released state funds would be diverted to improvement of roads outside the federal aid system in Kentucky.

The proposed issue is of general obligation bonds backed by full faith and credit of the state, secured specifically by revenues paid into the road fund. The bonds would run for 30 years. They could not be sold at less than par nor bear interest at more than 3%.

The test suit seeks a permanent injunction to restrain the state from issuing and selling any of the bonds authorized under the 1956 act.

One of the points on which the test suit is based is that Section 180.130 of Kentucky Revised Statutes is violated because this statute provides that operation and maintenance of toll bridges shall be paid out of the road fund. Despite the fact that toll bridge bonds were outstanding when the tollroad act was passed, the act tries to give the bond issue first claim on the highway fund, the court suit claims.

The suit also charges that the bond act violates Sections 27, 28 and 29 of the state constitution because it attempts to delegate what are alleged to be unconstitutional legislative powers to the State Property and Building Commission.

Construction Markets

An On-the-Spot Report from Nashville

The 1957 story of construction markets in Nashville centers on the rebirth of the city's downtown area.

As the new year began, an $8-million Cain-Sloan store was one of the few "downtown" department stores under construction in the United States. Its skeleton was rising a block away from the 34-story Life & Casualty Insurance Co. building, now nearing completion.

Another department store, Castner-Knott, is ready to embark on a $3-million expansion—downtown.

And still another, W. T. Grant & Co., is making plans to lease property in the heart of the city in a $5-million building to be started soon by Watkins Institute.

Tentative plans are being discussed now for an $18-million shopping center, with a department store included, downtown, in Nashville's 38-acre Capitol Hill redevelopment area. (This area also may get a $1-million motel.)

The year 1956 will be remembered as the one that saw the last slum areas disappear from the downtown area of Nashville. With the slum structures went older, if more respectable buildings, in the path of the Capitol Hill project. This year, new business and new industry is expected to appear in this half-moon clearing north of the state capitol—again in the downtown section.

Even Nashville's Chamber of Commerce, which has never owned its own building, now is planning one—in the downtown area.

Not all of the expansion projected for the coming months will be in the downtown section. Two hospital projects, for example, are not. These are million-dollar additions at the Baptist Hospital and at St. Thomas Catholic Hospital. And, a million-dollar expansion is planned at the Green Hills shopping center.

The first quarter of 1957 will bring more new industrial jobs in middle Tennessee than any comparable period in years, Tennessee Employment Security statisticians predict.

E. J. Eberling, chief economist for the employment security department, said the gain of 1,250 jobs is "attributable largely to the new $30-million Ford Motor Co. glass plant."

But, this is only part of a broader and more general improvement for the mid-state region, according to George Whitlatch, director of the State Industrial and Agricultural Development Commission.

Conceding that tight money could become a major obstacle to the region's industrial development, Whitlatch nevertheless remains optimistic about Tennessee's prospects.

Industrial commission staff members are predicting significant mid-state developments during the year in the electrical equipment, electronics, metalworking and chemical industries.

They expect announcement of the location of a major electrical equipment manufacturer will be made early this spring.

Another construction customer may be the paper and pulp industry, with its many products.

"We have the hardwoods for them now and at the rate we are planting pines, it will be only a few years until we will have an abundant supply," according to Carl I. Peterson, chief state forester.

As examples of the construction that could flow from this industry, Peterson mentioned the multi-million wood chemicals plant being built by Diamond Match Co. at Burnside, Ky., just a few miles north of the Tennessee state line and a kraft paper plant already announced for Savannah, Tenn. The state hopes for similar projects in the future.

On the public works scene, the Nashville District of the Corps of Engineers is expected to go ahead soon with a $15-million project at Fort Campbell, Ky., just across the state line. This project will include construction of housing units for officers and enlisted men on the base and some related construction, such as sewerage facilities.

Meanwhile, the City of Nashville, in co-operation with Davidson County, is planning a $37.5-million urban sewer program. The city already has applied to the regional office of the Housing and Home Finance Agency for preliminary planning funds.

All of this is in addition to the large federal and state highway program that is expected to get rolling in mid-Tennessee by fall.

Prudential land deal could touch off . . .

Boom in Boston's Back Bay

The Prudential Insurance Co. of America, with $13 billion in assets, has taken over the 28-acre Boston and Albany freight yards in Boston's Back Bay and soon will be erecting one of the biggest skyscrapers in the city.

The last legal obstacle to this unprecedented project for Boston—a foggy land title—has been removed, and the financially powerful insurance company announced that it was prepared to erect a second "Radio City" on the freight yard site, including a northeastern administration building that will be considerably taller than the nearby 26-story John Hancock Building.

Prudential paid $5 million for the biggest available development plot in any large city in the country.

It has taken an option on the famous old Mechanics Building, fronting on Huntington Ave. and is expected to get this ancient show building for about $800,000. Another small triangular strip of adjoining land was bought from the First Church of Christ Scientist for $65,000.

The overall acreage runs to 31½ acres, upon which Prudential will erect its biggest insurance building, even larger than the recently built administration building in Chicago. The city will immediately complete plans for a $7-million Civic Auditorium seating about 6,000 people; the Hilton Hotel chain is expected to put up a hotel; and a deluxe motel will be erected with three layers of parking space.

Prudential also has granted or reserved a 156-ft channel through the development for passage of the proposed extension of the East-West Tollroad, which will be opened as far as Route 28 sometime next May. Whether this will be a tollroad extension, a free road, or whether it will enter the city from some other direction has not been determined.

The proposed $100-million development, to be known as "Prudential Center," will be the biggest construction project to be tackled by this insurance company anywhere in the country. It is the latest link in a chain of construction projects completed in Chicago, Houston, Jacksonville, Los Angeles and Minneapolis.

Fronting on a Huntington Ave. plaza close to Copley Square, the development will be bounded on the other three sides by Exeter, Boylston and Dalton Sts. The Civic Auditorium will be constructed in the northeast corner close to the transportation facilities (the subway) at Massachusetts Station.

Transfer of land titles was accepted by Fred Smith, vice president of Prudential, following more than a year of uncertainty as to whether the company could get a clear title.

Some bank-held bonds delayed this clearance, as well as some confusion over whether the tollroad should be permitted to pass through the development.

Next important step is disclosure of completed plans and specifications Jan. 31, at a Greater Boston Chamber of Commerce luncheon.

Originally, Roger Stevens Development Corp. sought to bring Back Bay Center into Boston on the freight yards. The corporation held an option to buy the plot, pending the decision of the railroad to sell. Stevens spent close to $1 million on plot and land use studies before Prudential acquired his option.

Stevens acted as broker between the railroad and the insurance company in the sale of the land last week.

Due to the nature of the Back Bay terrain (most of which is filled land), Prudential anticipates some engineering problems for its new skyscraper. It is anticipated that the building will run over 30 stories, and might even extend over 40.

Building Code regulations on the height of buildings could be a blockade. The legal straight-up-without-a-setback height for this size structure is 155 ft.

But Mayor John B. Hynes buried that issue with: "You can bet your life that if there is any trouble with height regulations, it will very soon be removed."

Boston is enthusiastic about this prospective construction. Other big projects merely are waiting the green light from Prudential. This project could start a Back Bay construction boom.

While they are talking about $100 million at this period, Prudential officials indicated that the ultimate outlay in this development could run to more than twice that figure.

Subs Led Colorado Failures, 1956 Bankruptcy Records Show

Building trades subcontractors were the most numerous among the businesses that filed bankruptcy proceedings in Colorado during 1956.

Benjamin C. Hilliard, Jr., federal referee in bankruptcy, said there were 1,419 applications for bankruptcy (for all types of business), a record high.

Firms in the building industry were the most numerous among failing businesses, exceeding 30 in number. Exact figures by that category are not maintained.

Contractors' troubles stemmed from credit and a lack of business ability in heightened competition for construction jobs, Hilliard said. He added that most contractors forced into bankruptcy have been guilty of underbidding on jobs because of poor estimates.

VA Reports Further Drop In Home Loan Applications

With mortgage money still tight, the Veterans' Administration reported that requests for GI home loans dropped again during December.

The Veterans' Administration received 33,118 home loan applications last month. The figure was down 12% from November and was 27% below December, 1955.

The volume of appraisal requests, a barometer for measuring future home sites and loan activities, also was down.

There were 19,029 units in December appraisal requests for proposed construction, 13% fewer than the 21,941 in November and off 24% from the 24,892 in December, 1955.

Appraisal requests in December for existing dwelling units totaled 11,637, a decrease of about 13% from November and a decrease of 27% from December of last year.

VA housing starts in December totaled 14,987, a 31% drop below the 21,611 started a year ago.

$236-Million Bond Issue Proposed for Schools, Aid

A $236-million state bond issue to finance a construction program for state colleges and institutions was recommended to the Illinois legislature by Gov. William G. Stratton in his inaugural address.

Such a bond issue first would be passed by the state legislature, then submitted to voters for approval at a statewide referendum.

"A combination of circumstances accounts for our critical needs in the institutional and educational fields," the governor said. "The decline in building during the war years, obsolescence and inadequacy of existing structures, the sharp rise in postwar construction costs, and an enormous expansion in the number of young people expecting to attend college all have contributed to our problem."

(*B&F continued on page 76*)

Foreign Work Is Challenge

Management skills of U. S. engineers urgently needed in underdeveloped nations, panel of experts tells EJC meeting

The biggest challenge now facing U.S. engineers on overseas projects is supplying American management skills to underdeveloped nations, a panel of experts agreed at the Engineers Joint Council general assembly meeting.

"It is relatively easy to provide technical skill and service," C. P. Dunn, president of International Engineering Co., Inc., commented. "The thing that really is urgently needed—and which is not always easy to supply—is management skill."

"The need is for the ability to plan, organize, coordinate and then carry out the plan—in short, the ability to move out and get things done," he added.

U. S. engineers also received practical advice from the other panelists, including Carl W. Flesher, director of the Office of Resources of the International Cooperation Administration, and James T. Duce, vice president of the Arabian American Oil Co. Gail A. Hathaway, special assistant to the Chief of Engineers Army Corps of Engineers, was panel moderator.

These are some of the points U. S. engineers must keep in mind when working overseas, particularly in underdeveloped nations, the panel said:

- **Basic design must be simple.** Low-cost construction should get preference over possible labor saving because common labor is plentiful and skilled labor is at a premium. Few persons in these nations are familiar with modern management operation techniques and, in addition, there is generally a scarcity of foreign exchange, which makes it difficult to obtain modern equipment and materials.
- **Financial knowledge may be expected of U. S. engineers.** Often, American engineers are requested by foreign governments to make preliminary studies of projects to determine their economic feasibility, as well as engineering feasibility. Or, an American engineering firm, which desires to confine itself solely to technical guidance, may find itself unavoidably promoting the project financing because other qualified persons are not available.

"This situation requires the highest degree of integrity," Dunn said. "The engineer must never encourage a sour project and he must never allow anyone to assume that he has any special influence in financial matters."

Another problem that confronts U. S. engineers abroad is the absence of any "in training" status for the native engineer or supervisor of construction activities.

Panelists said that a native, educated abroad, frequently is put into a position of heavy responsibility as soon as he returns home. He may never receive the job experience necessary to complete his engineering or construction education.

Personal pride of individuals and the national pride of governments overseas can cause more difficulties for the unwary American engineer than technical problems, the panelists said.

It is quite natural, they commented, for a person who needs assistance to form a resentment toward the individual or organization that helps him.

As an example, one panelist repeated the remark of an engineer in Bombay who said: "Surely, we need your help. We need your money and your skill, but isn't there some way you can help us without making us listen to the constant repetition of the phrase 'great American know-how?' "

Comparatively high salary scales of U. S. engineers abroad also can cause friction in areas where the native standard of living is much lower.

Personnel selected by U. S. engineering firms for overseas assignments generally should be of a higher caliber than those required for domestic work, the panelists commented.

Elaborating on this, they said U. S. engineers sent abroad should be technically competent, able to operate with a minimum of supervision, tactful in their relations with others and sincerely desirous of being helpful.

A knowledge of the local language is desirable but not a necessity, the panelists said. And, they concluded, one of the requirements for success of an overseas engineering operation that involves a long stay is that a man should be permitted to take his family with him.

Higher Interest Rates Sought For Connecticut Road Bonds

The 1957 Connecticut legislature has been asked to scrap the present 4% interest rate on Connecticut Turnpike bonds.

It was this legal ceiling that resulted in failure of the state to market a $54-million issue in November. Previously, $200 million worth of the bonds had been sold.

The recommendation to the legislature was made by the Expressway Bond Committee and members of the Highway Finance Study Committee.

In addition to lifting of the 4% interest ceiling, the committee also recommended that the legislature:

- Remove the 10-day legal notice requirement and permit a public or private sale as determined by the Expressway Bond Committee. This amendment to existing turnpike financing legislation would also permit bonds to be sold at a discount at the discretion of the committee.
- Increase the state short-term note authorization from $50 million to $100 million and permit borrowing from this fund to finance any section of the expressway for a period not to exceed Dec. 31, 1959.

Business Briefs . . .

- **Dormitory awards**—Ohio State University took the first big step in its $60-million expansion program. The university awarded contracts for construction of three 11-story men's dormitories at a cost of $6 million. Interesting sidelights: Total low bids came in better than $1 million under the estimate of $7.2 million.
- **More mortgage money**—The nation's 6,000 savings and loan associations will increase their volume of home mortgage lending slightly this year, the chairman of the Federal Home Loan Bank Board, Albert J. Robertson, has predicted. Since 1950, savings and loan associations have financed about 36% of the home mortgage market each year.
- **Detroit school program**—The Detroit Board of Education approved a $45-million school construction program to house an expected increase of 26,000 students by 1960. The program for the next two years calls for building at least 16 new schools. To finance the expanded program, the Board of Education must either increase the special school tax for the next three years or sell a bond issue.
- **Bond sales down**—Municipal bond sales to finance construction were down again in 1956. A drop of 5% from the 1955 total was the second consecutive decline—and the $4,781 million worth of bonds sold represented the lowest annual total since 1952.
- **Institutional work**—A capital outlay of $3.4 million for construction at Wyoming state institutions during the next two years was recommended by Gov. Milward L. Simpson in his budget message to the legislature.

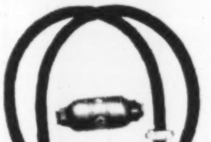
Air-Tool Maintenance Tips That Help Keep Costs Down

by LE ROI

Not many machines take the beating that rock drills and paving breakers do. Steel strikes steel 2,000 blows a minute, with a cumulative impact of 40,000 foot-pounds every 60 seconds.

Despite the rough usage rock drills get, preventive maintenance pays off. Here are a few of the basic things you can do easily—to keep your tools running longer and keep your costs down.

★ ★ ★



Le Roi-Cleveland automatic air-line oiler and 10-ft whip hose. Capacity one quart.

(Right) New 2-gallon air-line oiler. Automatic. Designed for wagon-drill and jumbo service.

See that your machines get plenty of oil. This is of vital importance. There are no piston rings in a rock drill, so the piston must fit the cylinder with practically zero clearance. If lubrication is neglected, hardened steel parts score and break.

Fill the integral lubrication chamber in the drill at the start of each shift and after every 3 hours of operation. Better yet, use a Le Roi-Cleveland air-line lubricator placed 10 feet from the machine. This type of lubricator needs filling only once each shift; the flow of oil can be adjusted as desired.

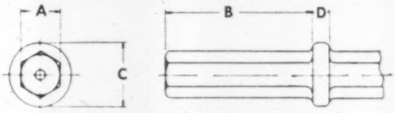
Le Roi-Cleveland Veribest rock drill hose
Oil- and heat-resistant.

Use only good hose and pipe. Pieces of rubber from oil-rotted hose will clog your drill so that it can't run. Scale from old rusty pipe can score the cylinder of your machine and result in expensive repairs.

We recommend the use of Le Roi-Cleveland "Veribest" hose. It was designed especially for rock drill service, with an abrasion-resistant outer cover and a special inner liner that resists the corrosive action of oil and hot air.

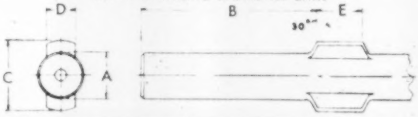
Be sure your drill steel shanks are properly sized and tempered. Undersized shanks cause rapid chuck wear that leads to broken pistons. Short shanks and long shanks reduce the force of blow — slow down your drilling. Shanks that are too soft stick in the machine. And, when they are too hard, they cause the piston to spall. This may ruin a drill cylinder. Poor shanks are expensive.

Follow these diagrams for correct shank sizes and temper them in oil.



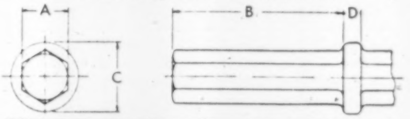
NOMINAL SIZE	A	B	C	D
7/8 HEX. x 3 1/4	7/8	3 1/4-3 5/16	1 3/8	3/8
7/8 Q.O. x 3 1/4	7/8	3 1/4-3 5/16	1 3/8	3/8
1 HEX. x 4 1/4	1	4 1/4-4 5/16	1 1/2	3/8
1 Q.O. x 4 1/4	1	4 1/4-4 5/16	1 1/2	3/8

Standard collared shanks for drills



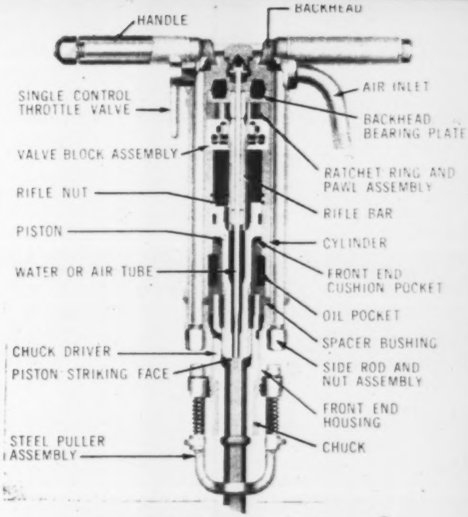
NOMINAL SIZE	A	B	C	D	E
1 LUG	1	3 13/16-3 7/8	1 1/2	5/8	1
1 1/8 LUG	1 1/8	3 13/16-3 7/8	1 3/4	3/4	3/4
1 1/4 LUG	1 1/4	3 13/16-3 7/8	1 7/8	13/16	3/4
1 1/2 LUG	1 1/2	5 -5 1/16	2 1/4	1	1

Standard lug shanks on round steel.



NOMINAL SIZE	A	B	C	D
1 HEX. x 4 1/4	1	4 1/4-4 5/16	1 1/2	3/8
1 1/8 HEX. x 6	1 1/8	6 -6 1/16	1 3/4	1/2
1 1/4 HEX. x 6	1 1/4	6 -6 1/16	1 3/4	1/2

Standard collared shanks for paving breakers.

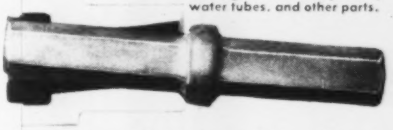


The principal parts of a rock drill.

Keep the striking faces of pistons and shanks square. In time, wear will tend to cup the piston face. When this occurs, the face should be ground until it is flat. Shanks should be square, too, if excessive piston damage is to be avoided.

Correctly faced pistons and shanks stand unsupported.

Don't use worn chucks. A worn chuck allows the drill steel to become misaligned in the machine. As a result, the piston strikes the sharp corners of the drill shank, and you have the cost of a broken piston in addition to the loss of footage.



Badly worn chucks lead to damaged shanks, pistons, water tubes, and other parts.

Use sharp bits. Dull bits bind in the hole and slow down the drilling. They also cause excessive strains on the machine and rapid wear of all rotating parts.

Le Roi-Cleveland one-use CRD detachable bits.

Le Roi-Cleveland developed the "one-use" CRD detachable bit, so that rock-drill operators can use sharp bits all the time at a considerable saving.

* * *

Yes, preventive maintenance pays off. If you'd like to post these tips as a reminder to your drill runners, a supply of reprints will be sent you free of charge. Just write for them.

LE ROI Division of Westinghouse Air Brake Co., Milwaukee 1, Wisconsin, manufacturers of Cleveland air tools, Tractair, portable and stationary air compressors, and heavy-duty industrial engines. Write us for information on any of these products.

RD-84

Miami: Sunshine and Shadows

AFL-CIO meetings under way with jurisdiction, racketeering, Taft-Hartley, union funds for housing among agenda items

With the echo of President Eisenhower's reminder that self-discipline is essential to freedom still ringing in the background, leaders of the AFL-CIO's top echelons gathered in Miami, Fla., last week to review the federation's accomplishments and to tackle some of the problems raised by the first full year of the AFL-CIO merger.

Major conclave of the labor leaders is the mid-winter meeting of the powerful AFL-CIO Executive Council, which meets this week following formal meetings of the various AFL-CIO departments. Sessions of a number of committees and other groups, including the National Joint Board for the Settlement of Jurisdictional Disputes, are being held concurrently, with Labor Secretary James P. Mitchell on the scene as an invited guest, observer, consultant and participant.

Mitchell, who arrived on Wednesday, attended the Thursday session of the Building Trades Department. Later, he called a session of his special joint committee, appointed last November to help coordinate proposed changes sought by the construction industry in the Taft-Hartley Act—it was the committee's sixth and final session but the results will not be disclosed officially until its formal recommendations have been submitted to President Eisenhower. This week, Mitchell attends the opening session of the AFL-CIO Executive Council, whose knotty and ticklish problems include the still-unsettled jurisdictional conflict between craft and industrial unions and the teamsters' challenge of Congress' current investigation of labor racketeering.

• Progress—As the storm clouds gathered over labor's internal problems, the building trades met at the Monte Carlo Hotel to report on their activities during the last quarter.

On the credit side of the ledger was the progress reported by Howard McSpedon, president of the New York City Building and Construction Trades Council, on efforts to put union funds to use in the construction of middle-income housing.

Four New York City unions—Operating Engineers Locals 14 and 15, Lathers Local 46, Plumbers Local 2 and Steamfitters Local 638—have agreed, McSpedon said, to invest $670,000 in the launching of a $35-million, 2,400-unit cooperative housing project. The proposed 31-acre site is in the East Bronx section of the city, which would be acquired, if all goes well, under Title I of the National Housing Act. Present indications are that the Electrical Workers Local 3 may also participate. Money from these sources would come from pension and welfare funds and from general union funds. Construction would be done and financing arranged by George F. Driscoll Co., New York City construction firm. A board of directors, representing the union-fund investors, would be in charge.

The proposal—still to be detailed—was originally made a year ago by New York City's Construction Coordinator, Robert Moses, following conferences with AFL-CIO President George Meany, contractors, construction union leaders and city officials.

• Problems—High on this week's agenda is the effort to find a peace formula for the sharing of in-plant industrial construction and maintenance work by union production workers and building tradesmen. This dispute has slowed down state mergers and has hamstrung the master-planning of AFL-CIO membership drives.

The Joint Committee of the two departments—Building Trades and Industrial Union—will consider a peace proposal drawn up by Meany, following failures of the Joint Committee as well as of a special AFL-CIO Executive Council subcommittee to find a solution. Biggest stumbling block has been, and remains, one of definition—a definition of "new construction" traditionally claimed by the building trades and of "maintenance" over which production workers assert jurisdiction as collective bargaining representative.

Tied in with this is a secondary boycott under way in Ohio by sheet metal workers against materials made by plants, such as Burt Manufacturing Co., whose employees are represented by industrial unions. The boycott threatens to torpedo the prospect of an early AFL-CIO merger in Ohio and comes before the AFL-CIO Executive Council this week.

Meanwhile, a Washington, D. C., juggling of Congressional committees for labor investigations and mounting AFL-CIO support for full cooperation in such investigations began to pave the way for a possible show-down between some of the building trades' leaders and other top AFL-CIO officials on the issue of who dictates what to whom.

As the week ended, biggest bombshell of all, and one that goes to the heart of the merger, came from Vice President James Carey, head of the International Union of Electrical Workers. Following his union's adoption of a rigid Code of Ethical Practices, destined to force the issue of labor's cooperation in labor investigations, Carey trained his guns on those unions—which include the carpenters and teamsters—that have refused to sign the AFL-CIO No-Raiding Pact. Hinting that those who fail to conform to merger policies should be ousted from their council seats, he said, "If Dave Beck (teamsters), Maurice Hutcheson (carpenters) and a few others would sign the No-Raiding Agreement, most of the others would also sign. It would resolve most of our jurisdictional disputes."

Prevailing Wages

Proposed Davis-Bacon Act amendments would add fringe pay, court review

Inclusion of fringe benefits in the determination of prevailing wages under the Davis-Bacon Act, and court review of the determinations, are proposed in bills submitted to the present Congress.

As the law now stands, the U. S. Secretary of Labor considers only straight-time hourly wage rates when he decides what a prevailing wage rate is. The inclusion of amounts paid in fringe benefits—such as health and welfare, pensions, vacations, holidays and overtime pay practices—has long been urged by the AFL-CIO Building and Construction Trades Department, which now has the support of the AFL-CIO in that direction. The Secretary's determinations, while subject to challenge within the department itself, are not subject to court review. Such a provision was inserted last summer in the Federal-Aid Highway Bill but was deleted before the law was passed.

The present fringe benefit proposal was introduced by Rep. John Fogarty, a past president of the bricklayers union in Providence, R. I. As part of his proposal, Fogarty would extend the law to all federally-assisted construction work.

This would eliminate the type of piecemeal extensions that have occurred in the past (hospitals, airports, highways, etc.). The bill would, in effect, accomplish the "modernization" of the law along the lines suggested by organized labor in the past.

The proposal for legal review of wage determinations was made by Rep. Bruce Alger. Any person "adversely affected or aggrieved" by a wage decision would be entitled to a judicial review of the determination. Appeals would have to be taken within 90 days. To overcome one of the major objections raised to judicial review in the past, Alger has specified that advertising of bids and awarding of contracts are not to be held up or delayed while a review of a determination is before the courts.

Seasonal Industries Face Higher Unemployment Taxes

A substantial number of employers in New York's construction industry would be affected by a proposal, soon to be submitted to the legislature, for redistribution of the cost of unemployment insurance in New York.

Amid mounting pressure—now common in most states—for changes in both the tax and benefit structures of unemployment compensation, the Associated Industries of New York State, Inc., last week proposed that a special tax be imposed on employers who contribute less in unemployment insurance taxes than is paid out in jobless benefits to their former employees. The additional tax would run from one-tenth to one percent of payroll and would apply to all employers, regardless of industry, with negative balances in the unemployment fund. The amount of the tax would vary according to the size of the employer's negative balance.

Aimed at seasonal employers in general and at the apparel industry in particular—where 66% of the employers have negative balances—the proposal would raise another estimated $10 million in taxes and would make employers with heavy labor turnovers pay a higher share of unemployment insurance costs.

A spokesman for the employer association sponsoring the proposal said the state's construction industry in 1955 had, according to state figures, 5,403 employers with negative balances aggregating $8 million. Total taxable payrolls in the industry, he said, were then $754 million and, of the employers covered, 27.7% had contributed less in unemployment taxes than their employees had drawn in benefits.

(*Labor continued on page 80*)

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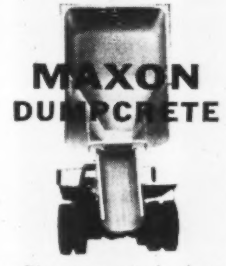

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One-Year Contracts Slipping

Survey indicates half of last year's labor contracts set duration at two years, or more, with 10-cent boosts common

Wider use of long-term contracts was one of the significant trends of last year's collective bargaining negotiations in the construction industry, according to the Bureau of National Affairs.

The BNA conclusions are based on an analysis of 600 contract settlements concluded in 1956 with union members of the building trades.

Biggest preference was for two-year contracts and the most commonly specified deferred wage increase was 10 cents an hour. Initial hourly wage increase most frequently granted was 15 cents.

• **Duration**—Half the 1956 contracts were found by BNA to run for two years or longer, with the majority of these containing specified deferred wage increases rather than provisions for future adjustments under reopening clauses. Contract durations for 598 agreements shaped up like this: 287 for one year; 231 for two years; 73 for three years; 3 for four years, and 4 for five years.

Over half the settlements concluded with iron workers, electrical workers, roofers, lathers and operating engineers were found to use the two-year term, whereas only two-fifths of the contracts with teamsters, plumbers, painters and laborers used this duration. Teamsters, however, lead the trades in the use of three-year contracts, with laborers, painters, bricklayers, carpenters and plasterers making a significant showing. More than three-fourths of the boilermaker settlements, it was noted, were for one year.

Geographically, use of the long-term contract occurred most frequently in the Rocky Mountain states, where BNA reported 65% of the contracts were set up on a two-year basis. In the Northeast and Midwest, contracts sprawled about equally across the one-year line, but in the Far West only about one-fourth of the agreements were for longer than one year.

• **Increases**—The size of the wage increase effective for 1956 appeared to depend to some extent on the geographical area, length of contract and handling of future increases, with a tendency toward larger boosts in one-year contracts. Subject to this qualification, the BNA analysis showed that the initial hourly increase occurring with the greatest frequency was 15 cents. Only 6% of the settlements gave initial increases of less than 10 cents and only 9% granted wage boosts of more than 20 cents an hour; 38% of the contracts provided for increases ranging from 10 through 14 cents.

Smaller amounts generally were used for deferred wage increases, with 10 cents appearing as the most popular figure. This appeared in one-third of the long-term agreements and was most common in carpenter, laborer and teamster settlements. Deferred increases of 12, 12½, 13 and 15 cents an hour were used in 34% of the longer-than-one-year contracts. The only trade found to have won deferred increases in excess of 20 cents an hour was the plumbers.

Highest average wage increases, according to BNA, were won in the Northeast. In that area, the average initial increase was 16.1 cents an hour. The West Coast came next with 14.6 cents, followed by the Midwest with 14.3 cents. Unions in the Southeast came out on the short end with an average hourly raise of 13.6 cents.

Apprenticeship Conference Dates Announced for 1957

Four regional conferences designed to stimulate the training of apprentices have been scheduled for this year. They are the Eastern Seaboard, Mid-Atlantic States, Southern States and North Central States Apprenticeship Conferences.

The conferences are sponsored by management and labor, including those in the construction industry, in cooperation with representatives of state apprenticeship agencies and the recently renamed federal Bureau of Apprenticeship and Training.

First to be held will be the Eastern Seaboard Apprenticeship Conference, representing seven of the North Atlantic states, at York Harbor, Me., June 5-7. This will be followed by the newly-organized Middle Atlantic States Apprenticeship Conference in Wheeling, W. Va., July 16-19 and the 9th Annual Southern States Apprenticeship Conference in Houston, Tex., July 18-20.

On Nov. 20-21, the first biennial meeting of the North Central States Apprenticeship Conference, covering Wisconsin, Illinois, Indiana, Michigan, Ohio and Kentucky, will be held in Indianapolis.

(*Labor continued on page 82*)

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Now rugged Stran-Steel buildings are clad with a look of luxury. With new *Stran-Satin* metal wall you get an attractive rib design and a soft pleasing luster. A wall that is strong and durable, assembled with panels that are longer, wider and easier to erect. In combination with other materials—brick, stone, wood, glass or Stranlite plastic panels—*Stran-Satin* metal wall gives you limitless variation of exterior decor. Now you can have all the features of low-cost all-steel construction, plus the eye appeal of more expensive materials.

America's newest and finest steel buildings can be site-styled, to your requirements, too. They are available in clear-span widths of 32, 40, 50, 60, 70 and 80 ft. and multiples thereof.

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Minneapolis 4, Minn., 708 S. 10th St.
New York 17, New York, 405 Lexington Ave.
N. Kansas City 16, Mo., 1322 Burlington
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(*Labor continued on page 82*)

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Mid-Term Strikes

Supreme Court refuses to write a no-strike clause into long-term contracts

Use of longer-term labor contracts, now gaining a foothold in the construction industry, got a boost last week when the U.S. Supreme Court ruled that the Taft-Hartley Act does not deny the right to strike under a reopening clause before the contract itself has expired.

In an opinion written by Chief Justice Earl Warren, the court overruled the Eighth Circuit Court of Appeals in St. Louis, which had held that the law forbids a union to strike for modification of a contract, unless the contract has been terminated by mutual agreement, even though the contract provides that one of the parties can seek to have it modified after filing a 60-day notice of such intention. The lower court had, in effect, written a no-strike clause into the contract.

"We do not believe," Warren said, "that the language used by Congress requires any such result." The fact that Congress authorized an effort to modify a contract before the expiration date, provided a 60-day notice of such intention is filed, he noted, must be considered in the light of the law's purpose to "substitute collective bargaining for economic warfare and to protect the right of employees to engage in concerted activities for their own benefit."

Warren observed that to hold otherwise "would discourage the development of long-term bargaining relationships. Unions would be wary of entering into long-term contracts with machinery for reopening them from time to time, if they thought the right to strike would be denied them for the entire term of such a contract, though they imposed no such limitations on themselves."

The case stemmed from efforts of the International Oil Workers Union to modify its contract with the Lion Oil Co. after filing, as the contract provided, a 60-day notice of its intention to reopen the contract. A strike was called after negotiations during the 60-day cooling off period had failed to settle the controversy.

Heated Controversy Arises Over Argentine Wage Boost

What amounts to nation-wide bargaining without representation has come under heavy attack by members of the construction industry in Argentina, where arguments of the opposition strike a familiar chord in the debate over the use of prevailing wages in the United States—saddling an area with unrealistic and unsound rates.

Out of a congress of construction companies from the interior of Argentina, which recently met in Tucuman, has come the formation of a permanent group to represent the interests of builders outside the national capital. Burning question that united the provincial builders was the wage agreement signed in Buenos Aires last Oct. 9, which sets labor costs throughout the country.

"The new scales, imposed on the interior of the country without our consent, nor consultation with us, cannot be applied in the interior of the country without resulting in a great number of failures in the industry", a resolution of the congress stated.

An executive committee of builders from the interior provinces will spearhead the drive to modify the agreement.

Under the agreement, wage increases were made retroactive to February, 1956. "When such a provision assumes the character of a direct attack on the capital structure of business enterprises", the builders said, "nobody can validly call it legal".

Pacific Northwest Trades Are Granted Wage Boosts

Contract negotiations with members of the Associated General Contractors of America, Inc. have resulted in wage increases ranging from 10 to 22 cents an hour for operating engineers and building laborers in western Washington and Oregon.

The new two-year contract for Seattle engineers, concluded with the Seattle, Tacoma and Mountain Pacific chapters of the AGC, grants a 6% wage boost, with an additional increase of 5% next Jan. 1.

Total increases, including 10 cents an hour for a pension program, range from 15 to 22 cents an hour. New scale for a shovelman, for example, is $3.46 an hour, plus 10 cents for the pension fund, as compared to the former scale of $3.36.

The new agreement for laborers in the building industry in Oregon grants a 10-cent hourly wage increase to 8,000 laborers in the state. Base scale established by the contract ranges from $2.35 to $2.75 an hour.

The laborers' agreement, which became effective as of Jan. 1, was negotiated by the Oregon District Council of Laborers, the building and heavy divisions of the Portland chapter of AGC, the Portland Home Builders Association and the Concrete Contractors Association.

OFFICIAL PROPOSALS

Bids: February 11, 1957

City of Fort Lauderdale, Florida

NOTICE TO BIDDERS

Sealed bids will be received until 11 o'clock A.M., EST February 11, 1957, in the City Commission Room, Fort Lauderdale, Florida for

SECTION I —SIX WELLS AND PUMPING STATIONS
SECTION II —RAW WATER MAINS
SECTION III—WELL FIELD ELECTRICAL DISTRIBUTION AND APPURTENANCES

Bidding blanks may be obtained from the office of the City Engineer. Plans and specifications are on file in the office of the City Engineer.

A deposit of $25.00 for plans and specifications, and of $25.00 each for additional copies of plans or specifications, will be required. All deposits for plans and specifications will be refunded upon their return in good condition within ten (10) days of the opening of bids.

A certified check for 2% of the total amount of the bid, made payable to City of Fort Lauderdale, Florida, shall accompany each proposal as evidence of good faith and responsibility of the bidder. This check shall be retained by the payee as liquidated damages should the bidder refuse or fail to enter into a contract with the payee for the execution of the work embraced in the proposal, in the event the proposal of the bidder is accepted.

The City reserves the right to reject any or all bids.

W. J. Veeder, City Manager

Bids February 27, 1957

The City of White Plains Department of Public Works

NOTICE TO CONTRACTORS
OUTDOOR ICE RINK

Sealed bids for construction of an outdoor skating rink will be received by the Commissioner of Public Works of the City of White Plains, New York, at his office, No. 255 Main street, White Plains, New York, until 11:00 a.m., E.S.T., Wednesday, February 27, 1957.

The work is to be done under separate contracts as follows: No. 877-Mechanical; No. 878-General Construction; No. 879-Electrical; and No. 880-Plumbing.

Contract documents may be examined at the above office and obtained at the said office upon payment of One Hundred Dollars ($100.00) in cash or certified check payable to The City of White Plains, refundable upon return of said documents in good condtion wiithin ten (10) days after bidding date.

Bid security in the form of a certified check or bank draft payable to The City of White Plains shall accompany all bids and shall be in the following amounts: Contract No. 877-Mechanical-$7,500.00; Contract No. 878-General-$2,500.00; Contract No. 879-Electrical-$1,000.00; Contract 880-Plumbing-$100.00.

Eric A. Andrews
Commissioner of Public Works

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RATE: The rate for Official Proposal advertising is $2.10 per line or fraction set solid. Where the advertisement is set other than solid, the space is measured by total space occupied and charged on basis of 12 lines to the inch.

CLOSING DATE: Friday 10:30 A.M. for issue dated the following Thursday.

SEND COPY TO: Official Proposal Division,
Engineering News-Record
P.O. Box 12
New York 36, N. Y.

Bids: February 7, 1957

New York State Road Work

NOTICE TO CONTRACTORS

STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Canal Law and Highway Law, sealed proposals will be received, until 10:30 A.M., on February 7, 1957 by Henry A. Cohen, Director, Bureau of Contracts and Accounts, 14th Floor, the Governor Alfred E. Smith State Office Building, Albany, N. Y. for:

Contract M 57-3 for Cleaning and Painting Bridges over the Erie Canal and Mohawk River in Montgomery, Herkimer and Oneida Counties, New York

Maps, plans and specifications may be examined and obtained at the following offices:

(a) Bureau of Contracts and Accounts, 14th Floor The Gov. Alfred E. Smith State State Office Bldg., Albany, New York.
(b) Department of Public Works, 270 Broadway, New York City, N. Y.
(c) In addition to the above mentioned offices, plans, maps and specifications for Contract M 57-3 may be examined and obtained at the office of Mr. Lacy Ketchum, District Engineer, 109 North Genesee St., Utica 1, New York.

The deposit for Plans and Proposal Forms for Contract M 57-3 is $10.00. A refund in full will be made to bidders for return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

The Engineer's Estimate of Cost for Contract M 57-3 is $10,000.00

Proposals for Contract M 57-3 must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check, payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum of $500.00. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Canal Law and to the Highway Law as set forth in "Instructions to Bidders" in the contract specifications. The right is reserved to reject any or all bids.

JOHN W. JOHNSON
SUPT. OF PUBLIC WORKS

Bids: March 30, 1957

Board of Management for the Port of Rangoon

Tenders for supply of Mechanical Handling Equipment

1. The Board of Management for the Port of Rangoon invites tenders for the supply of the undermentioned Mechanical Handling Equipment:—

(a) Porter's Trucks.
(b) Platform Trailers of various load capacities.
(c) Tractors.
(d) Heavy Duty Diesel Industrial Tractors.
(e) Fork Lift Trucks of various types.
(f) Mobile Cranes of various lift capacities.
(g) Crane Weighing Scales.
(h) Aluminum Dockside Articulated Gangways of various sizes.
(1) Gate Pass Issuing and Cancelling Machines.

2. Tender documents consisting of detailed Specifications of Equipment desired, Instructions to Tenderers, Form of Tender, Schedule, General and Special Provisions of Contract and Form of Contract may be obtained from the office of the undersigned on payment of K 25 per set; or from Ogilvy Gillanders and Co., Ltd., King William House, 2a Eastcheap, London E.C. 3, on payment of £2 per set; or from Messrs. Tippetts-Abbett-McCarthy and Stratton Engineers, 62 West 47th Street, New York 36, N. Y. on payment of U. S. $5.00 per set.

3. Tenders must be submitted on the Board's Tender Form available as mentioned in paragraph 2 above, in sealed envelopes addressed to—

The Chairman,
Board of Management for the
Port of Rangoon,
Post Box No. 1,
Rangoon, Burma

and marked "Tender for supply of Mechanical Handling Equipment". All tenders should reach the office of the undersigned not later than 12 noon on 30th March 1957 or posted to the above mentioned address sufficiently early to reach on or before the appointed time and date.

4. The Board does not bind itself to accept the lowest or any tender or to assign any reasons for rejection of any tender.

WIN PE
CHAIRMAN

Bids: February 19, 1957

Construction of Gravity Service Water Storage Tanks

ADVERTISEMENT FOR BIDS
ARLINGTON, VIRGINIA

Sealed proposals for furnishing all materials and equipment and doing all work required for the construction of water storage tanks, as described below, will be received by the Purchasing Agent in Room 213, in the Court House Building at Arlington County, Virginia, until 2:00 P.M., Eastern Standard Time on Feb. 19, 1957 and there publicly opened and read immediately thereafter:.

STAGE II—CONTRACT 7
CONSTRUCTION OF LEE WATER STORAGE TANKS

1. Location: The work is located in Arlington County, Virginia, on county property at 24th St., North and North Woodrow Street.

2. Type of Work: The principal items of work include the following:

a. Construction of two water storage tanks, of 3.0 M.G. capacity each with all appurtenances ready to operate. Tanks to be of prestressed or standard reinforced concrete construction.

b. Included in the above principal item is all clearing, excavation, back-fill, grading, concrete, miscellaneous piping and appurtenances, operating equipment, fencing, paving, walks, topsoil and seeding, etc.

3. Copies of Plans and Specifications, Information for Bidders, Bid Forms and other bidding and contract documents, may be examined at the office of the Chief Engineer of the Water Division, County Court House, Arlington, Va.; at Dodge Reports, 900 F. Street, N.W., Washington, D. C. and at the office of ALEXANDER POTTER ASSOCIATES, CONSULTING ENGINEERS, 50 CHURCH STREET, NEW YORK 7, N. Y.

4. Copies of Plans, Specifications and Bidding Documents may be obtained from the Purchasing Agent in Room 213, Court House Building at Arlington, Virginia upon deposit of THIRTY ($30.00) DOLLARS PER SET.

Full refund will be made to actual bidders for return of one (1) set, in good condition, within two weeks after closing date for receipt of bids; refund for return of all other sets, in good condition, WITHIN THE SAME PERIOD, will be Fifty (50%) percent of the deposit. No refund will be made for return of documents in poor condition or later than the two week period stipulated.

All bids must be on the form contained in the Contract and Specifications.

Contractors, whether resident or nonresident in Virginia will be required to show evidence of a certificate of registration as required by Chapter 7 of Title 54 of the Code of Virginia before their bids will be considered if the bid is $20,000 or more.

All bids must be accompanied by a certified check or acceptable bidder's bond in an amount of not less than Five Per Cent (5%) of the amount of the bid, made payable to the Treasurer of Arlington County, as bid security.

The successful bidder will be required to furnish a Performance Bond conditioned upon the faithful performance of the Contract and upon payment of all persons supplying labor and furnishing materials on the construction of the work.

No bidder may withdraw his bid within Thirty (30) days after actual date of opening thereof.

The County Board of Arlington County, Virginia, reserves the right to reject any or all bids and to waive any informality in the bids.

ARLINGTON COUNTY, VIRGINIA
By: H. G. Bonney
Purchasing Agent

Bids: February 7, 1957

New York State Road Work

NOTICE TO CONTRACTORS

STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Canal Law and Highway Law, sealed proposals will be received, until 10:30 A.M., on February 7, 1957 by Henry A. Cohen, Director, Bureau of Contracts and Accounts, 14th Floor, the Governor Alfred E. Smith State Office Building, Albany, N. Y. for:

Contract M 57-1 for Repairing and Replacing a Portion of the Barge Canal Wall near Bushnell's Basin Monroe County, New York

Maps, plans and specifications may be examined and obtained at the following offices:

(a) Bureau of Contracts and Accounts, 14th Floor The Gov. Alfred E. Smith State Office Bldg., Albany, New York.
(b) Department of Public Works, 270 Broadway, New York City, N. Y.
(c) In addition to the above mentioned offices, plans, maps and specifications for Contract M 57-1 may be examined and obtained at the office of Mr. Bernard F. Perry, Acting District Engineer, Barge Canal Terminal, Rochester 1, New York.

The deposit for Plans and Proposal Forms for Contract M 57-1 is $10.00. A refund in full will be made to bidders for return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

The Engineer's Estimate of Cost for Contract M 57-1 is $129,600.00

Proposals for M 57-1 must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check, payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum of $7,000.00. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Canal Law and to the Highway Law as set forth in "Instructions to Bidders" in the contract specifications. The right is reserved to reject any or all bids.

JOHN W. JOHNSON
SUPT. OF PUBLIC WORKS

U. S. Government

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Invitation No. DS-4841) will be received at Denver, Colorado, until February 26, 1957, for furnishing one vertical-shaft, double volute, centrifugal-type pump with regulating valve having capacity of 275 cfs under a head of 54 feet; and one vertical-shaft, 4,000-volt, 3-phase, 60-cycle, 0.8 power-factor, synchronous motor rated 2,250 horsepower at either 257 or 240 rpm for Yuma-Mesa Pumping Plant, Gila Project, Arizona. Delivery is desired within 300 days. For particulars, address Bureau of Reclamation, Building 53, Denver Federal Center, Denver 2, Colorado. W. A. Dexheimer, Commissioner.

EMPLOYMENT OPPORTUNITIES

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DISPLAYED

The advertising rate is $31.80 per inch for all advertising appearing on other than a contract basis. Frequency rates quoted on request.

An advertising inch is measured 7/8" vertically on a column—3 columns—30 inches to a page.

Subject to Agency Commission.

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Send NEW ADS and Inquiries to Classified Advertising Division of ENGINEERING NEWS-RECORD
P. O. Box 12, N. Y. 36. February 14th issue closes February 4th

---

Highway & Bridge Engineers Designers & Draftsmen

Career opportunities for men interested in professional recognition.

Excellent working conditions and employee benefits including liberal retirement program.

Openings in Pennsylvania, Maryland, Florida, Mississippi and overseas.

Air Mail Resume TO R. L. SHAW, ***Personnel Director***

MICHAEL BAKER, Jr., INC.

BAKER BLDG. *Consulting Engineers* ROCHESTER, PA.

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HIGHWAY DESIGNERS
STRUCTURAL DESIGNERS
DRAINAGE DESIGNERS

FOR HIGHWAY and BRIDGE WORK

SENIORS and JUNIORS

WORK IN RICHMOND, VA.

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REPLIES (Box No.): Address to office nearest you
c/o This publication Classified Adv. Dir.
NEW YORK: P. O. Box 12 (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

Civil Engineer-Estimator: for Industrial construction. Approximately 10-15 years of both estimating and job experience. Salary open, position permanent. Located in Florida. P-3632, Engineering News-Record.

Civil Engineers for design and construction of municipal and industrial sewerage, treatment and water supply projects. Old established consulting firm in Midwest has openings in permanent staff. Please send full information and references. P-3899, Engineering News-Record.

Soils Engineer—prefer man with MS in soils about 1945 or 1946—to head up a design group in a firm of consulting engineers specializing in design of dams. Must be top-notch design engineer and supervisor. Salary open. Location Midwest. P-3942, Engineering News-Record.

Assistant to Chief Engineer: Unusual opportunity for qualified man with firm of consulting engineers in Pa. Candidate must be thoroughly experienced in design of highways, bridges and related structures and capable of directing staff. Please submit experience resume, references, salary requirements and availability. P-3914, Engineering News-Record.

Design Engineer with estimating experience to join organization of general contractor specializing in heavy industrial and commercial work in expanding Ohio valley area. State experience, age, salary requirements, references, and date available. Seabright Construction Co., 4201 Wood St., Wheeling, W. Va.

Wanted . . . Heavy Construction Road Superintendent to work for long established New England contracting firm operating in New York and New England. Salary commensurate with experience and ability. P-3963, Engineering News-Record.

Estimators—General Construction! Graduate Engineers, under 30, some experience, military active duty completed. Reply in full with references, recent photograph and salary required. Dondlinger & Sons Const. Co., Inc. Box 2033, Wichita, Kansas. Phone AMherst 53101.

Wanted Superintendent or Engineer experienced for sheeting and shoring on water and sewer lines. Immediate placement. State full details of background and salary desired. P-3919, Engineering News-Record.

POSITIONS VACANT

Graduate Civil Engineers not over 30 and preferably single. Must have military training completed and interested in the building construction business, starting in the field. We offer opportunity for rapid advancement to ambitious, hard-working young men willing to accept responsibility. Starting salary $110.00 per week if inexperienced with higher wages for those with some experience. Send complete history data. Martin K. Eby Construction Co., Inc., 610 N. Main, Wichita 5, Kansas.

Construction Superintendent: For firm engaged in heavy construction mostly highway structures and bridges. Permanent position for experienced man capable of complete field responsibility including layout, organizing construction crews and coordinating subcontracts. Salary $12,000. Advance as justified by performance. First job 18 months in New York City (most contracts in New York and bordering states). Write full qualifications, age and when available. P-4035, Engineering News-Record.

Permanent position available Engineer capable visualizing, designing, drafting, costing, building and equipment, and production line layouts of four plant upstate New York canned food processor. Write P-4008, Engineering News-Record stating resume education and experience.

Master mechanic, superintendent, and young engineer wanted for well established organization specializing in foundation work in Eastern and Southeastern regions. Experience in cast-in-place concrete pile equipment and installation necessary. Fine opportunity for long-term employment for qualified personnel. Replies held strictly confidential. Send to P-4058, Engineering News-Record.

Construction Engineers: Contractor for large Dam Project on St. Lawrence Seaway has several openings in office and field for varied and interesting work. Immediate placement. State age, experience, education, and salary required. Reply P-4027, Engineering News-Record.

We have permanent openings for several structural and highway designers on highways in states west of Mississippi. Location Nebraska. Salaries open, depending on experience and ability. Excellent living and working conditions. Paid vacation, sick leave, hospitalization and medical, life insurance. Please state full particulars regarding personal, education and experience history in application letter. P-3987, Engineering News-Record.

Estimator-engineer for est. G/C., industrial and commercial bldgs. and govt. work. Write exp., salary. R. M. DuVal Construction Co., 54 Route 17, Paramus, N. J.

SUPERINTENDENT
BUILDING CONSTRUCTION

Top flight man by growing company operating nationally. Give all pertinent data in reply including education, experience, salary, references and when available.

BLOUNT BROTHERS CONSTRUCTION CO.
P. O. Box 949 Montgomery, Ala.

POSITIONS VACANT

Senior Cost Engineer familiar with the Uniform System of Accounts for electric utilities. Duties will consist of analyzing completed major construction projects for an Electric Utility. Experience with the Federal Power Commission or a State Public Service Commission would be desirable. Some experience with the Property Record Department of any Electric Utility would also be an asset. Indianapolis Power and Light Company. Employment Department. 1230 West Morris St., Indianapolis, Indiana.

Bridge Designers and Draftsmen with experience for permanent positions. Forward full educational, employment and personal data with salary requirements. Macomber & Faber, 1824 North Fourth Street, Harrisburg, Pennsylvania.

Supervisor for grading, soil moving, and related landscape work on highway jobs. Must be able to take full charge. Excellent opportunity. Write for appointment. P-4098, Engineering News-Record.

Two sanitary engineering vacancies in state stream pollution control work. Salary, $5400-6000. Two to four years' experience in sewage disposal or pollution control work required. Submit qualifications to West Virginia State Water Commission, 1709 Washington Street, East, Charleston 1, West Virginia.

Wanted Soil Mechanics, concrete and asphalt inspectors and technicians. Recent graduates with soil mechanics and concrete laboratory training may apply. Openings in field and laboratory for construction contracts of highways and large engineering projects in the middlewest. Send resume to: Westville Engineering Company, Inc., P. O. Box 67, Westville, Indiana.

Wanted Experienced ironworker layout mechanic top pay for top man. P-4093, Engineering News-Record.

Const. Mgr., also supts., for expanding G/C. Grad. C.E. Minimum 10 yrs. exp. Labor following necessary. Send resume, state salary. R. M. DuVal Construction Co., 54 Route 17, Paramus, N. J.

(Continued on page 86)

STRUCTURAL ENGINEER

For central engineering department of fast-growing Chicago manufacturing firm with large number of plants in U. S. and Canada.

Work being done includes buildings, from small additions to complete new plants, shops, warehouses, offices, and laboratory research facilities. Prefer graduate civil or architectural engineer to handle structural design of steel, concrete, and timber for such buildings. Desirable to have at least three years experience in engineering office with similar duties including checking of structural shop drawings and structural drafting.

Write Personnel Manager,
American-Marietta Company,
101 E. Ontario, Chicago 11, Illinois

FIELD ENGINEERS and PARTY CHIEFS

for highway construction layout—highest rates—paid overtime—midwest and east locations. State experience, availability and telephone number.

P-4082, Engineering News-Record,
520 N. Michigan Ave., Chicago 11, Ill.

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In New York City and New Jersey

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Young civil engineer interested in broad application of civil engineering.

Excellent opportunity with consulting firm. Liberal benefit plans and good working conditions. Location Middle West.

Send resume of education and experience with salary requirements to:

P-3223, Engineering News-Record
520 No. Michigan Ave., Chicago 11, Ill.

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To be in charge of Product Design and Development Department in national headquarters of established manufacturer of products for the building and highway construction industry. Responsibilities include both administrative and technical duties. Unusual opportunity for man who likes challenging diversified work and who can accept responsibility. Salary open with extra benefits of vacation, pension, plan, and generous bonus plan.

Midwestern location with excellent living conditions available.

P-1115, Engineering News-Record
520 N. Michigan Ave., Chicago 11, Ill.

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PHILADELPHIA 33, PA.
ATTN: MR. JOHN A. HALBE, VICE-PRES.

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Superintendent

Mill Creek Sewage Works:

Salary range, $7830 to $8613 a year. Supervise plant operation of 129 mgd capacity plant, now under construction. Modified primary treatment, separate sludge digestion with sludge disposal. Must have four years experience in sewage plant operation, engineering degree, be able to qualify for Ohio P. E. and Class "A" operator's license. Management ability essential.

Liberal employment benefits, retirement plan.

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Field Engineers with refinery or related construction experience.

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Manager of Employment & Placement
Industrial Relations Division

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Engineers, Builders for Industry

220 Bush St. San Francisco, Calif.

Recruiting Offices in New York, Los Angeles, San Francisco and Houston

EMPLOYMENT OPPORTUNITIES

POSITIONS VACANT

(Continued from page 81)

Construction inspector for building project in Parkersburg, West Virginia. Must have experience in inspecting architectural, electrical, and mechanical. Job beginning in February and to last about 1 year. Possibility for good man to obtain permanent position. Salary $200.00 per week. Write giving full details on experience, references, etc. Replies held confidential. Reply to P-4138, Engineering News-Record.

Engineer capable of layout and takeoff for Western New York Paving contractor. Reply P-4154, Engineering News-Record.

Superintendent for Western New York paving and excavating contractor. Reply P-4155, Engineering News-Record.

General Superintendent and Chief Engineer for growing contractor in specialized phase of heavy construction. Must be capable of handling difficult excavation and dewatering from estimating and bidding to completion. Engineering degree, preferably Civil. Must be willing to travel. Submit education, experience, salary requirements and availability. Unusual opportunity for qualified man. P-4158, Engineering News-Record.

SELLING OPPORTUNITY OFFERED

Old established Brazilian Company, acting as manufacturers' representatives selling on own account and otherwise, seeks first class exclusive representation in Brazil for bituminous machinery (Asphalt Plants and Pavers), Road-Rollers and Motor-Graders. Letters to Araguaia Comercio e Importacao S/A, Av. Beira Mar, 200, Rio de Janeiro, Brazil.

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Salaried Positions $6.000 to $35.000. We offer the original personal employment service (established 46 years). Procedure of high standards individualized to your personal requirements. Identity covered. Particulars—R. W. Bixby, Inc., 559 Brisbane Bldg., Buffalo 3, N. Y.

POSITIONS WANTED

Superintendent-Project Manager. Heavy construction all types 16 years experience. Cost and equipment conscious. Will relocate. PW-3960, Engineering News-Record.

Superintendent Engineer—20 yrs experience-all types roads-excavation structures-sewer & water lines. PW-3315, Engineering News-Record.

Canadian Civil Engineer (McGill '26), specialized in municipal problems, seeks a permanent responsible position with a municipality or private concern, located in the Southern States. Excellent administrative, professional and personal background. Now employed as a free-lance municipal consultant. 54 years old. Member of the Corporation of Professional Engineers of Quebec. Full details on request. PW-4003, Engineering News-Record.

General Manager Executive. Heavy construction diversified foreign and domestic experience includes joint venture management of all phases (finance planning, engineering and construction supervision) dams, tunnels, shafts, airbases, railroads, Power Plants, Bridges etc. PW-4061, Engineering News-Record.

Sales Engineer: Experienced in specification work with architects and engineers and sales to utilities, contractors, industrials, etc. Well acquainted Eastern Pennsylvania, Southern New Jersey, Delaware and Maryland. Have serviceable car. PW-4064, Engineering News-Record.

General Construction Manager or Superintendent—Practical background, bricklayer by trade. Operated own company thirty-five years. Past ten years grossed up to five million dollars per year—mostly hospitals, schools, and housing in five hundred thousand to one and a half million dollar jobs each. Dissolved company. Decided to retire but find it is boring. Fifty-seven years old, excellent health, married, three teen age children. Need lots of action yet. Would like position as Assistant to President or General Manager of construction company with plenty of problems. Salary open and dependent on responsibilities assumed. Able to furnish best of references. PW-4096, Engineering News-Record.

POSITIONS WANTED

Construction Supervisor (Mechanical) age 30 thoroughly experienced in the construction of steam heating, circ. hot water heating, sprinkler systems (wet & dry), pump houses, refrigeration, domestic plumbing etc. Desire a responsible position in Europe. Have completed two Foreign contracts. PW-3994, Engineering News-Record.

Chf. Estimator—B.S.C. 10 yrs. heavy construction bids, subs, payments, costs. P.E. license N. Y. and N. J. Prefer Metropolitan area. PW-4120, Engineering News-Record.

Surveying field parties, 3 or 4 men, fully equipped, well exp. in all types of work. Under licensed supervision. Willing to travel. PW-4122, Engineering News-Record.

Equipment Superintendent with experience and ability to handle large foreign jobs. Available March 1st. PW-4135, Engineering News-Record.

Registered Graduate Civil Engr. age 32. Diversified engineering background. Want employment with engr. or contracting firm with option to purchase in 1-3 years. Have capital to invest. PW-4141, Engineering News-Record.

Project Manager-Superintendent, heavy & bridge construction, 19 years experience, $200, PW-4152, Engineering News-Record.

Licensed Civil Engineer-Attorney, 31, desires legal position with construction firm. Engineering and legal experience. Outstanding law school record. PW-4129, Engineering News-Record.

Civil Engineer, MCE, PE—6 years bridge experience—desires position in prestressed concrete field—location: Southern California or Florida preferred. PW-4133, Engineering News-Record.

Construction executive 28 years experience in all phases of heavy and industrial construction, power plants, chemical plants, refinery installations, buildings, locks, dam, and tunnels. Interested in connection with aggressive contractor doing lump sum contracts and promotional sales work. Estimating and pricing accurate and construction methods current. Available at present time. Primary education M.E. Desirous of participating agreement. PW-4149, Engineering News-Record.

Office Manager, Married, age 33. 12 yrs. experience field and main office. All phases, heavy on costs. Desire relocation middle or far west. PW-4130, Engineering News-Record.

Civil Engineer, BSCE, Registered. Diversified exp. Municipal, construction—field & office, sewers, highways etc. $740.00, PW-4140, Engineering News-Record.

Librarian, woman, M. L. S. science and technology, seeks responsible work in company or research library. Experienced; reads German, French, Spanish, Italian. Prefer Southwest or West. PW-4142, Engineering News-Record.

Graduate Construction Engineer, 25, 3 years experience estimating for general contractor. Served as Architects and engineers field supervisor. Seeks position as estimator with a general contractor. PW-4115, Engineering News-Record.

Engineer past sixty, mentally alert, physically sound, background in electrical and mechanical engineering. Forty five years experience covers power plants and heavy industrials from draftsman to project manager. Foreign experience speak Spanish. Now actively employed. What offers. PW-4107, Engineering News-Record.

Civil Engineering Technician thirty years experience field and office highways bridge other construction seeking permanent position witr future possibilities South preferable. PW-4090, Engineering News-Record.

Bridge designer, project engineer, also experienced in other branches of civil engineering and report writing, would like position with company either in Florida or South America. Complete knowledge of Spanish and English. Registered, 7 years experience. PW-4087, Engineering News-Record.

Field Supt. for Railroad Construction and maintenance 25 yrs experience, hard hitting, furnish best of references. 18 yrs good health—(sober). PW-4157, Engineering News-Record.

SELLING OPPORTUNITY WANTED

Engineer, retired, own office, will sell to builders, contractors, architects. RA-3927, Engineering News-Record.

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Consulting Engineers
101 Park Avenue New York 17

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or write to Edward A. Kolner
Arthur G. McKee & Company
2300 Chester Ave., Cleveland 1, Ohio

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ENGINEERS

Long established firm of consulting engineers with world-wide practice needs both beginners and experienced civil, electrical, mechanical, and foundation engineers for interesting work on large dams, powerplants, and river control works. Permanent positions. Liberal employee benefits. Starting salaries dependent on qualifications. Please send complete resume to Hugo Niemi, Personnel Manager.

HARZA ENGINEERING CO.
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OFFERS good starting salaries, choice of location within U.S., outstanding benefits, interesting and varied assignments (in sales, distribution and engineering), thorough training, regular appraisal, advancement on merit leading to management positions.

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P-3890 Engineering News-Record
Class. Adv. Div. P.O. Box 12, N.Y. 36, N.Y.

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Engineers & World-Wide Builders for Industry

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Graduate Engineer with several years in applications for employment in Saudi Arabia. Knowledge of manufacturing helpful. Serve as technical advisor to company, government and road contractors and builders.

Write outlining personal history and work experience. Please include telephone number.

Recruiting Supervisor, Box 201

ARABIAN AMERICAN OIL COMPANY
505 PARK AVENUE
NEW YORK 22, NEW YORK

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BOX NUMBERS count as one line additional in undisplayed ads.

DISCOUNT of 10% if full payment is made in advance for four consecutive insertions of undisplayed ads.

The advertising rate is $23.60 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

AN ADVERTISING INCH is measured ⅞ inch vertically on one column, 3 columns—30 inches to a page.

EQUIPMENT WANTED or FOR SALE ADVERTISEMENTS acceptable only in Displayed Style.

Send NEW ADVERTISEMENTS or Inquiries to Class. Adv. Div. of Engineering News-Record, P. O. Box 12, N. Y. 36, N. Y. February 14th issue closes February 4th.

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4—Model 200 Rex double PUMPCRETE machines. Two powered by 50 HP electric motors and two with Waukesha gas engines....	$7,500.	each
1—5 ton CABLEWAY with 1000′ of 2″ gut and 125 HP electric hoist..	3,500.	
2—1600′ reels 3½″ LOCK COIL cable........................	2.	Ft.
1—Robinson Model 50 automatic CEMENT UNLOADER............	2,000.	
1—Wemco HYDROSEPARATOR 32′ diameter powered by 7½ HP motor	9,000.	
1—Koehring 4 cubic yard tilting CONCRETE MIXER..............	4,500.	
4—Hydro Silica PUMPS powered by 15 HP motors...............	1,250.	each
1—BACKHOE attachment for Model 22-B Bucyrus Erie Shovel......	2,200.	
2—Sets crawler FRAMES for Model 54-B Bucyrus Erie Shovel (1 set long 1 set standard)..	2,250.	each
1—2 Drum Taylor MINE HOIST powered by 55 HP motor........	1,500.	
3—"Intelligiant" water MONITORS with air controls for operation..	1,500.	each

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295 Madison Avenue New York 17, N. Y.
Murray Hill 5-7757

FOR SALE

1 New Wiley Whirley 20′ Diameter Turntable 100′ Boom

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Independent Swing Engine
66″ Diameter Vertical Boiler, Oil Fired
Steel Cab
Complete for Barge Mounting
Completed about March 1, 1957.

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WILLIAMS CONSTRUCTION COMPANY
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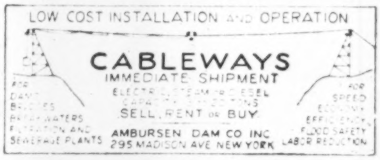

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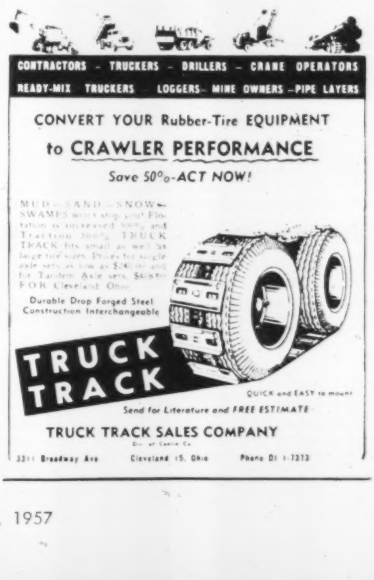

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Editorials

Water Is Where You Put It

No Great Upsurge in water development projects can or should be expected as a result of the President's well publicized trip through the mid-western drought areas. But those who know how badly we need a better national water policy and program as a basis for wise water development should not lose the opportunity to push for them while nationwide attention is temporarily focused on the water problem.

Although the President confined his public statements to temporary drought relief measures, it is known that much of his time on the trip was spent learning about long-range projects designed to counter drought effects. So, taking into account also the President's budget requests for increased water development funds, there is a good chance that the Administration is about ready to give the nation's water problem the attention it deserves. If such, indeed, is the atmosphere, water program planners should make the most of it.

Among the objectives to be sought, as a step to achievement of a national water policy, is the establishment in the Executive Branch of a board to review and coordinate water development planning—a recommendation that has been included in all past water policy studies. But another objective, in view of the present wide interest in water, should be to pin down in the public mind a few fundamental concepts.

For example, it would be useful—and more in conformance with modern requirements—if the old adage "Water is where you find it" were discarded in favor of a new concept—"Water is where you put it." If this seems trite, its general acceptance is nevertheless necessary if public support is to be expected for the expensive projects required to move water from where it falls to where it is needed and can best be used. Industry, necessarily concentrated where adequate labor, transport facilities, raw materials or markets are available, cannot always be located where sufficient water is available from nearby sources. Nor can agriculture be efficiently carried on in just any region that will grow crops in good rainfall years. Some of this land must be irrigated by water conveyed from far away.

Acceptance of the idea that water must be moved—even long distances—to where industry and agriculture need it and can use it best does not, of course, mean a license to undertake any and all grandiose schemes that may be proposed. Each must demonstrate a clear superiority of benefit over costs, in the sensible determination of which use will have to be made of two other concepts not yet widely accepted.

The first of these is that there are certain areas of the country which should be denied to farming—and to industry, too, when to supply them with water would be plainly uneconomic. Ways to accomplish this denial, within the framework of democratic government, are not easy, but in the case of agriculture the soil bank plan has merit, as might also controlled grazing under some such scheme as is practiced by states in controlling oil production. The important fact for public acceptance is that some measure of national zoning is justified in the national interest just as city zoning is necessary in the municipal interest, and that this much abridgement of personal liberty must be borne even in a free-economy democracy.

The second concept, useful in determining benefit-cost ratios of water-moving schemes, is that benefited local interests pay their share of the costs. There is a justifiable federal share in many projects, but it should be limited to the national interest. True partnership in water development is what is needed.

In total, if the idea of shifting water, when justified, were adopted as a basic tenet of water conservation and development, if unproductive land could be taken out of cultivation and if a better partnership between local interests and the federal government were worked out, a big hurdle would be passed in the development of a national water policy. These possibilities are within closer reach because of the drought-induced attention focused on water by the biggest national audience ever.

No More Water Needed?

Incongruous at Any Time, in view of its own fine record of long-range water planning, but particularly startling now when water shortages are front-page news, is New York City's decision to dismantle a pumping plant which would assure it a 120-mgd supply in case of need. The reason for writing off a $2.6 million investment, made only seven years ago, is obscure to say the least.

The plant was built, when a water shortage threatened the city, to pump Hudson River water into the Delaware River Aqueduct system. It was never used, and now that Delaware River water is available to supplement the Catskill and Croton supplies, the city is unusually well off waterwise. Moreover, when the New York State Water, Power and Control Commission granted permission for the city to build the emergency plant, it set Jan. 1, 1957 as the date it should be removed.

This rather odd stipulation, it must be supposed, stemmed from the fact that Hudson River water is considered to be greatly inferior to the mountain water, which it has been New York's good fortune to have. But one can accept that fact and still wonder at the justification for discarding a perfectly good 120-mgd emergency supply already in being.

It probably costs no more than $50,000 a year for standby electric power and a maintenance crew—a 2% charge—to keep the plant ready, and much of this could be saved by mothballing the equipment. In this uncertain world of droughts and atomic bombs, that is pretty cheap insurance against emergencies.

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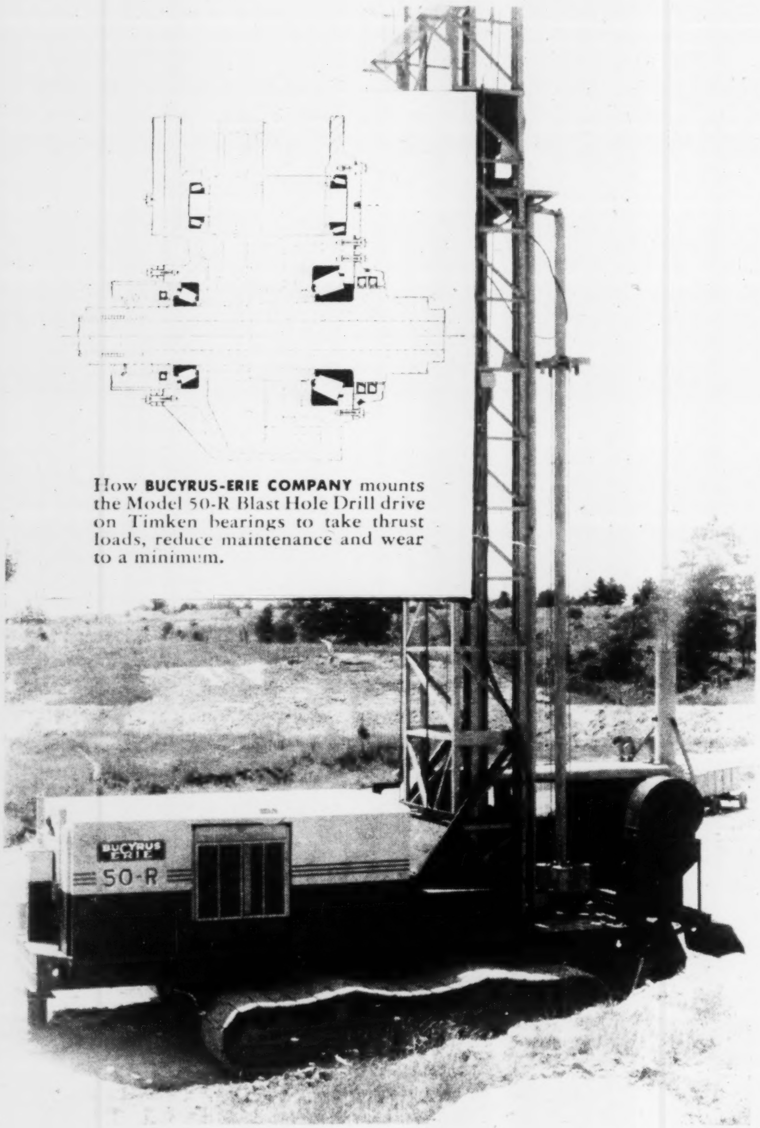

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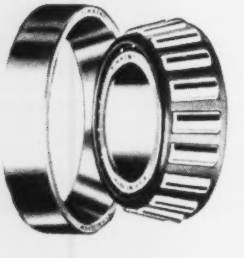

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